

**From:** [Wendy Loya](#)  
**To:** [Paul Leonard](#); [John Trawicki](#); [Randy Brown](#); [Jennifer Reed](#); [Sarah Conn](#); [Hollis Twitchell](#); [Joanna Fox](#); [Peter Butteri](#); [Drew Crane](#); [Christopher Latty](#); [Patrick O'Dell](#); [Carl Johnson](#); [Stephen Arthur](#); [Joshua Ream](#); [Steve Berendzen](#); [Catherine Collins](#); [Susan LaKowski](#); [Edward Decleva](#); [Tim Allen](#); [Ryan Wilson](#); [Ted Swem](#); [Joshua Rose](#); [jorgenson](#); [Lynnda Kahn](#); [Angela Matz](#); [Charles Hamilton](#); [John Martin](#)  
**Cc:** [Greg Siekaniec](#); [Karen Clark](#); [Mary Colligan](#); [Mitch Ellis](#); [Eric Taylor](#); [Bud Cribley](#)  
**Subject:** 1002 DEIS Review: Overview and Vol 1 (email 1 of 3)  
**Date:** Thursday, August 9, 2018 12:02:15 PM  
**Attachments:** [Coastal Plain EIS Vol I FWS.pdf](#)

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Dear 1002 Team,

Attached is Volume 1 of the DEIS for your review prepared by BLM and the contractor EMPSi. This is a DRAFT for Cooperating Agencies; it will also undergo review by BLM State Office and at the Washington DC level before it is revised and released to the Public as a Draft EIS. **I am happy to say that it includes an alternative that reflects our collective effort to identify ways to manages for all 5 purposes of the Arctic Refuge, and our review now will help make it even better.** We want to maintain the respect we have achieved for our knowledge, preparation and cooperation thus far, so please keep this internal so that we remain at the table as a trusted partner. There will be time for the public and the media to review a draft when it is ready, but now is not that time. Our draft if marked FWS and traceable back to us, please do not share.

**We have a little extra time: Comment forms are due COB Tuesday August 14<sup>th</sup> to Wendy. FWS will submit collated comments on Friday August 17<sup>th</sup>.**

Here is an outline for our approach:

- 1. You will get an email with a comment form and the instructions provided by BLM.**
- 2. Review Chapter 2: Alternatives. ALL Experts review Stipulations and ROPs relevant to their area(s) of expertise;** you will need to understand the Stipulations to evaluate the Environmental Consequences. What we called BMPs are now ROPs.
- 3. Please read Vol II Appendix M: Approach to the Environmental Analysis to understand what factors were considered in describing Enviro Consequences (sent in second email)**
- 4. Below is a matchup of Vol I Chapter 3: Affected Environment and Environmental Consequences with who we believe has the expertise to review those chapters.**

- If you do not want to review a section you are listed for, please let me know ASAP.
- If you feel you have expertise to contribute to another section, please do so and include in your comment form. Check in with the primary reviewer as needed.

Climate & Meteorology: Paul

Air Quality: Tim and Catherine

Acoustic Environment: TBD

Physiography: Janet Jorgenson and Josh Rose

Geology and Minerals: Josh Rose, John T, Wendy L, Pat O'Dell

Peteroleum: Pat O'Dell

Paleontological Resources: Ed, Arctic Refuge Staff

Soils: Josh Rose

Sand and Gravel: Josh Rose

Water Resources: John T  
Solid and Hazardous Waste: Angela Matz, ES Staff  
Vegetation and Wetlands: Janet  
Wildland Fire: Peter B  
Fish and Aquatic Species: Randy  
Birds: Chris Latty & MBM experts  
Terrestrial Mammals: Steve A  
Marine Mammals: Ryan Wilson (PB); Charlie (Treaties (page 3-120))  
Landownership & Use: Hollis, Susan  
Cultural: Ed  
Subsistence: Hollis, Josh, Carl  
Sociocultural Systems: Hollis,  
Environmental Justice: Hollis, Josh, Carl  
Recreation: Jen  
Special Designations: Jen, Roger, others  
Visual Resources: Paul, others  
Transportation: Jen, Steve B  
Economy: Notify Wendy if you have expertise  
Public Health: Notify Wendy if you have expertise  
Ch 3.5-3.7: John Martin

## **5. Volume II: Appendices.**

### **Maps and Figures: Review for your area of expertise**

Collaboration and Coordination: Wendy  
Section 810: Hollis and Josh Ream  
Regulations & Permits: Sarah, Ted, Patrick, John M, Steve & Joanna  
RSDS: Wendy and Paul  
Paleontological: Ed  
Water Resources: John T  
H. Birds: Chris & MBM  
H. Terrestrial Mammals: Steve A  
H. Vegetation and Wetlands: Janet  
I. Fish and Aquatic sp: Randy  
J: Subsistence: Hollis, Josh, Carl  
K,L: Josh Ream and Carl?  
M: John Martin

Thank you! Don't hesitate to contact me or your POC with any questions. I am available by email or cell at anytime.

Wendy  
Dr. Wendy M. Loya,  
Arctic Program Coordinator  
Office of Science Applications, US Fish and Wildlife Service  
Anchorage, Alaska  
907.786.3532 (office)

907.277.2942 (mobile)

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**Cc:** [Mary Colligan](#); [Mitch Ellis](#); [Eric Taylor](#); [Bud Cribley](#)  
**Subject:** 1002 DEIS Review: Volume 2 (email 2 of 3)  
**Date:** Thursday, August 9, 2018 12:13:10 PM  
**Attachments:** [Coastal Plain EIS Vol II FWS.pdf](#)

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Attached is Volume 2.

**Please remember this is for INTERNAL USE ONLY. It will change after review and the public will have a chance to review that finalized draft. Please do not share further. Please 😊!**

**Wendy**

Dr. Wendy M. Loya,  
Arctic Program Coordinator  
Office of Science Applications, US Fish and Wildlife Service  
Anchorage, Alaska  
907.786.3532 (office)  
907.277.2942 (mobile)



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**Cc:** [Mary Colligan](#); [Mitch Ellis](#); [Eric Taylor](#); [Bud Cribley](#)  
**Subject:** 1002 DEIS Review: Comment form and instructions for review (email 3 of 3)  
**Date:** Thursday, August 9, 2018 12:13:06 PM  
**Attachments:** [140L6318F0003\\_AdminDrftEIS\\_BLM-agency-cmmts\\_20180808.docx](#)

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## **Form should be returned to Wendy by COB Tuesday August 14<sup>th</sup>**

Attached is a comment matrix form in Microsoft Word which should be used to capture all of your comments. Instructions for commenting and completing the form are at the beginning of the comment matrix.

Please note there are areas that are still being refined and updated for consistency based on recent corrections such as: acreage calculations across all chapters; inclusion of some caribou and cultural resource data; and formatting, however, the information presented in this Draft EIS provides the foundation for subsequent versions and should not change the overall analysis. Please keep that in mind while reviewing and that constructive comments should focus on the following:

- Adequacy of addressing the purpose and need.
  - Missing information, such as tribal, local and state planning documents or other readily-available data.
  - Inconsistencies between stipulations and required operating procedures in the alternatives.
  - Adequate illustrations of the alternatives in the maps.
  - Adequacy and appropriate level of direct, indirect, and cumulative impact analysis.
- Provide specific changes to improve analysis and note any gaps in logic.
- Consistency of impact analysis between resource topic areas.

**Please remember this is for INTERNAL USE ONLY.**

As always, let me know if you have any questions.

Wendy  
907.786.3532 (office)  
907.277.2942 (mobile)

Dr. Wendy M. Loya,  
Arctic Program Coordinator  
Office of Science Applications, US Fish and Wildlife Service  
Anchorage, Alaska  
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**Administrative Draft EIS, for BLM and Cooperating Agency Review****To BLM and Cooperating Agency Reviewers:**

The **Administrative Review Draft EIS**, is intended for BLM and cooperating agency review. (Please do not distribute.)

- Please complete the MSWord comment matrix (provided at the end of these instructions) by saving this file with a new file name including your last name (for example, name your comment matrix "I40L6318F0003\_AdminDrftEIS\_BLM-agency-cmnts\_20180808\_HayesN.docx"), and then fill out your comments on the document.
- **Return to [wendy\\_loya@fws.gov](mailto:wendy_loya@fws.gov) by Tuesday Aug 14<sup>th</sup> COB**

**How to Provide Valuable Feedback****Commenting:**

For each comment, please fill in the following information under the appropriate column heading in the matrix:

- ✓ Page number, line number, or table number on which you are commenting. **The page and line numbers in the PDF file MUST be used.**
- ✓ Your comments:
  - **Your comments must be specific and provide exact changes to the text.** Please be unambiguous, clear, and directive, with exact wording changes stated. Ambiguous comments, such as "What?," "Poor," or "Is this right?," are not helpful and will not be considered.
  - If you have the same comment more than once, do not refer back to a previous comment number. Instead, please copy and paste your comment to a new row in the matrix and provide the specific page number, etc.
  - If you need additional space for comments, click in the table cell where you would like to comment, select the *Table* menu, *Insert*, and either *Rows Above* or *Rows Below*.
- ✓ Reviewers should keep this in mind, and constructive comments should focus on the following:
  - Adequacy of addressing the purpose and need.
  - Missing information, such as tribal, local and state planning documents or other readily-available data.
  - Inconsistencies between stipulations and required operating procedures in the alternatives.
  - Adequate illustrations of the alternatives in the maps.
  - Adequacy and appropriate level of direct, indirect, and cumulative impact analysis. Provide specific changes to improve analysis and note any gaps in logic.
  - Consistency of impact analysis between resource topic areas.

**COASTAL PLAIN OIL AND GAS LEASING PROGRAM  
ENVIRONMENTAL IMPACT STATEMENT**

**BLM and Cooperating Agency Comments on Administrative Draft Review EIS**

<b>Cmt #</b>	<b>Page #</b>	<b>Row # or Line #</b>	<b>Reviewer Name/ Agency</b>	<b>Comment</b>	<b>A/R/M<sup>1</sup></b>	<b>Remarks / How Resolved (Reviewers: Leave this column blank)</b>
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<sup>1</sup> A = Comment accepted; R = Comment rejected with explanation; M = Comment-response modified

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**Cc:** [Mary Colligan](#); [Mitch Ellis](#); [Eric Taylor](#); [Bud Cribley](#)  
**Subject:** 1002 DEIS Review: Navigating errors and Stips/ROPs (email #4)  
**Date:** Friday, August 10, 2018 6:36:39 PM  
**Attachments:** [Table 2.3 Stips ROPS BMS Vol1 NPR-A Final IAP FEIS.pdf](#)  
[Arctic Refuge Coastal Plain DRAFT Table of Stips and BMPs 072418.docx](#)

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Hi 1002 team,

There are definitely some confusing errors in the DEIS, including references to maps that don't exist and confusing numbering of ROPs in Table 2; hopefully they won't complicate your review too much. For example, ROPs go from being numbered continuously to having letter precursors by activity category, as we saw in NPRA Table 2.3. To help you sort through Stips and BMPs/ROPs for your resource, I am attaching what were our last recommended edits to stipulations; some of these may have changed slightly since you worked on them around the workshop, but I believe I was able to consult most of you about proposed changes before sending to BLM.

Also, if you feel that Alt B and C are inadequate in protecting a resource, please refer to the NPRA Table 2.3 (attached) to make a recommendation on what protections should be included. A couple of examples: if there is "No similar objective or requirement" for Alt B and C, but there is a requirement for NPRA, simply comment that "ROP X should include the same requirements as indicated for NPRA (and list)" or "For ROP X, Alt B and C should at least include requirements a, d and e from Alt D to meet purpose 1 and 4 of the Arctic NWR."

Thanks for all the great effort and questions already, you all are an impressive team!

Wendy

Dr. Wendy M. Loya,  
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Table 2-3. Alternative stipulations and required operating procedures/best management practices<sup>2</sup>**WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY**

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>A-1 Required Operating Procedure</i></b></p> <p><b>Northeast</b>  <u>Objective:</u> Protect the health and safety of oil field workers and the general public by disposing of solid waste and garbage in accordance with applicable federal, State, and local law and regulations.  <u>Requirement/Standard:</u> Areas of operation shall be left clean of all debris.</p> <p><b>Northwest</b>  <u>Objective:</u> Protect the health and safety of oil field workers and the general public by avoiding the disposal of solid waste and garbage near areas of human activity.  <u>Requirement/Standard:</u> Same.</p>	<p><b><i>A-1 Best Management Practice</i></b></p> <p><u>Objective:</u> Protect the health and safety of oil and gas field workers and the general public by disposing of solid waste and garbage in accordance with applicable federal, State, and local law and regulations.</p> <p><u>Requirement/Standard:</u> Areas of operation shall be left clean of all debris.</p>			
<p><b><i>A-2 Required Operating Procedure</i></b></p> <p><b>Northeast</b>  <u>Objective:</u> Minimize impacts on the environment from non-hazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil field workers and the general public. Avoid human-caused changes in predator populations.  <u>Requirement/Standard:</u> Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the authorized officer for approval, in consultation with federal, State, and North Slope Borough regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application.</p>	<p><b><i>A-2 Best Management Practice</i></b></p> <p><u>Objective:</u> Minimize impacts on the environment from non-hazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil and gas field workers and the general public. Avoid human-caused changes in predator populations.</p> <p><u>Requirement/Standard:</u> Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the authorized officer for approval, in consultation with federal, State, and North Slope Borough regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application.</p>			

<sup>2</sup> All setback distances included in this table are to be measured as of the time of the application for a permit for a development. In addition, for Alternatives B-1, B-2, C, and D, facility development along the coast would be required to be designed to maintain the prescribed setback distance for the anticipated life of the facility.

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>Management decisions affecting waste generation shall be addressed in the following order of priority: (1) prevention and reduction, (2) recycling, (3) treatment, and (4) disposal. The plan shall consider and take into account the following requirements:</p> <ul style="list-style-type: none"> <li>a. Methods to avoid attracting wildlife to food and garbage. All feasible precautions shall be taken to avoid attracting wildlife to food and garbage. (A list of approved precautions, specific to the type of permitted use, can be obtained from the authorized officer.)</li> <li>b. Disposal of putrescible waste. Requirements prohibit the burial of garbage. Lessees and permitted users shall have a written procedure to ensure that the handling and disposal of putrescible waste will be accomplished in a manner that prevents the attraction of wildlife. All putrescible waste shall be incinerated, backhauled, or composted in a manner approved by the authorized officer. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with EPA and Alaska Department of Environmental Conservation regulations and procedures. The burial of human waste is prohibited except as authorized by the authorized officer.</li> <li>c. Disposal of pumpable waste products. Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection in accordance with EPA, Alaska Department of Environmental Conservation, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by Alaska Department of Environmental Conservation, will be allowed as necessary to facilitate annular injection and/or backhaul operations.</li> <li>d. Disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by a National Pollutant Discharge Elimination System or State permit.</li> </ul> <p><b>Northwest</b>  <u>Objective:</u> Same  <u>Requirement/Standard:</u> Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. Management decisions affecting waste generation shall be addressed in the following order of priority: (1) prevention and</p>	<p>Management decisions affecting waste generation shall be addressed in the following order of priority: (1) prevention and reduction, (2) recycling, (3) treatment, and (4) disposal. The plan shall consider and take into account the following requirements:</p> <ul style="list-style-type: none"> <li>a. Methods to avoid attracting wildlife to food and garbage. The plan shall identify precautions that are to be taken to avoid attracting wildlife to food and garbage.</li> <li>b. Disposal of putrescible waste. Requirements prohibit the burial of garbage. Lessees and permitted users shall have a written procedure to ensure that the handling and disposal of putrescible waste will be accomplished in a manner that prevents the attraction of wildlife. All putrescible waste shall be incinerated, backhauled, or composted in a manner approved by the authorized officer. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with EPA and Alaska Department of Environmental Conservation regulations and procedures. The burial of human waste is prohibited except as authorized by the authorized officer.</li> <li>c. Disposal of pumpable waste products. Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection in accordance with EPA, Alaska Department of Environmental Conservation, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by Alaska Department of Environmental Conservation, will be allowed as necessary to facilitate annular injection and/or backhaul operations.</li> <li>d. Disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by a National Pollutant Discharge Elimination System or State permit.</li> </ul>			

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
reduction, (2) recycling, (3) treatment, and (4) disposal. The plan shall be submitted to the authorized officer for approval, in consultation with federal, State, and North Slope Borough regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application. The plan shall consider and take into account the following requirements: [Requirements a through d are the same as in Northeast.]				
<p><b>A-3 Required Operating Procedure</b></p> <p><b>Northeast</b></p> <p><u>Objective:</u> Minimize pollution through effective hazardous-materials contingency planning.</p> <p><u>Requirement/Standard:</u> For oil- and gas-related activities, a hazardous materials emergency contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials, or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures. In addition contingency plans related to facilities developed for oil production shall include requirements to:</p> <ol style="list-style-type: none"> <li>Provide refresher spill-response training to North Slope Borough and local community spill-response teams on a yearly basis.</li> <li>Plan and conduct a major spill-response field-deployment drill annually.</li> <li>Prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve-Alaska operating area. Planning shall include development</li> </ol>	<p><b>A-3 Best Management Practice</b></p> <p><u>Objective:</u> Minimize pollution through effective hazardous-materials contingency planning.</p> <p><u>Requirement/Standard:</u> For oil- and gas-related activities, a hazardous materials emergency contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures in the plan applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures.</p> <p>In addition contingency plans related to facilities developed for oil production shall include requirements to:</p> <ol style="list-style-type: none"> <li>Provide refresher spill-response training to North Slope Borough and local community spill-response teams on a yearly basis.</li> <li>Plan and conduct a major spill-response field-deployment drill annually.</li> <li>Prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve-Alaska operating area. Planning shall include development and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's/permittee's operating area and areas outside the lessee's/permittee's operating area that could be affected by their activities. (The specific area to be</li> </ol>			



## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's operating area and areas outside the lessee's operating area that could be affected by their activities. (The specific area to be mapped shall be defined in the lease agreement and approved by the authorized officer in consultation with appropriate resource agencies.) Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the authorized officer in consultation with appropriate federal, State, and North Slope Borough resource and regulatory agencies.</p> <p><b>Northwest</b>  <u>Objective:</u> Same  <u>Requirement/Standard:</u> For oil- and gas-related activities, a hazardous-materials emergency-contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures applicable to fuel and hazardous substances handling (associated with transportation vehicles) may consist of best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All staff shall be instructed regarding these procedures.</p>		<p>mapped shall be defined in the lease agreement and approved by the authorized officer in consultation with appropriate resource agencies.) Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the authorized officer in consultation with appropriate federal, State, and North Slope Borough resource and regulatory agencies.</p>		



## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>A-4 Required Operating Procedure</b></p> <p><b>Northeast</b></p> <p><u>Objective:</u> Minimize the impact of contaminants on fish, wildlife, and the environment; including wetlands, marshes and marine waters; as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.</p> <p><u>Requirement/Standard:</u> Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and response contingency plan per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:</p> <ul style="list-style-type: none"> <li>a. <u>On-site Clean-up Materials.</u> Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.</li> <li>b. <u>Storage Containers.</u> Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of waterbodies, fuel containers are to be stored within appropriate containment.</li> <li>c. <u>Liner Materials.</u> Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.</li> <li>d. <u>Permanent Fueling Stations.</u> Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.</li> <li>e. <u>Proper Identification of Containers.</u> All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.</li> </ul>	<p><b>A-4 Best Management Practice</b></p> <p><u>Objective:</u> Minimize the impact of contaminants on fish, wildlife, and the environment; including wetlands, marshes and marine waters; as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.</p> <p><u>Requirement/Standard:</u> Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and response contingency plan per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:</p> <ul style="list-style-type: none"> <li>a. <u>On-site Clean-up Materials.</u> Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.</li> <li>b. <u>Storage Containers.</u> Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of waterbodies, fuel containers are to be stored within appropriate containment.</li> <li>c. <u>Liner Materials.</u> Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.</li> <li>d. <u>Permanent Fueling Stations.</u> Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.</li> <li>e. <u>Proper Identification of Containers.</u> All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.</li> </ul>			

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>f. <u>Notice of Reportable Spills</u>. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the authorized officer as soon as possible, but no later than 24 hours after occurrence.</p> <p>g. <u>Identification of Oil Pans (“duck ponds”)</u>. All oil pans shall be marked with the responsible party’s name.</p> <p><b>Northwest</b>  <u>Objective</u>: Minimize the impact of contaminants on fish, wildlife, and the environment; including wetlands, marshes and marine waters; as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and activities. Protect public health and safety.  <u>Requirement/Standard</u>: Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and response contingency plan per 40 CFR 112 (OPA). The plan shall consider and take into account the following requirements:</p> <p>a. <u>On-site clean-up materials</u>. Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.</p> <p>b. <u>Storage Containers</u>. Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer in excess of 1,320 gallons in storage capacity, shall be stored within an impermeable lined and diked area or within approved alternate storage containers such as overpacks, capable of containing 110% of the stored volume.</p> <p><i>[Requirements c through f are the same as in Northeast.]</i></p>	<p>f. <u>Notice of Reportable Spills</u>. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the authorized officer as soon as possible, but no later than 24 hours after occurrence.</p> <p>g. <u>Identification of Oil Pans (“duck ponds”)</u>. All oil pans shall be marked with the responsible party’s name.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>A-5 Required Operating Procedure</b></p> <p><b>Northeast</b>  <u>Objective:</u> Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment.  <u>Requirement/Standard:</u> Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception of small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g., portable generators and water pumps, will be permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.</p> <p><b>Northwest</b>  <u>Objective:</u> Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment.  <u>Requirement/Standard:</u> Refueling of equipment within 500 feet of the active floodplain of any fish-bearing water body and 100 feet of non-fish-bearing waterbodies is prohibited. Small caches (up to 210 gallons) for motorboats, float planes, ski planes, and small equipment, e.g., portable generators and water pumps, will be permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.</p>	<p><b>A-5 Best Management Practice</b></p> <p><u>Objective:</u> Minimize the impact of contaminants from refueling operations on fish, wildlife, and the environment.  <u>Requirement/Standard:</u> Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception of small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g., portable generators and water pumps, will be permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b>A-6 Required Operating Procedure</b></p> <p><b>Northeast</b>  <u>Objective:</u> Minimize the impact on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process.  <u>Requirement/Standard:</u> Surface discharge of reserve-pit fluids is prohibited.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Surface discharge of reserve-pit fluids is prohibited unless authorized by applicable National Pollutant Discharge Elimination System, Alaska Department of Environmental Conservation, and North Slope Borough permits (as appropriate) and approved by the authorized officer.</p>	<p><b>A-6 Best Management Practice</b></p> <p><u>Objective:</u> Minimize the impact on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process.</p> <p><u>Requirement/Standard:</u> Surface discharge of reserve-pit fluids is prohibited.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>A-7 Required Operating Procedure</b>  <b>Northeast</b>  <u>Objective:</u> Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.  <u>Requirement/Standard:</u> Discharge of produced water in upland areas and marine waters is prohibited.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Procedures for the disposal of produced fluids shall meet the following:</p> <ol style="list-style-type: none"> <li>In upland areas, including wetlands, disposal will be by subsurface-disposal techniques. The authorized officer may permit alternate disposal methods if the lessee demonstrates that subsurface disposal is not feasible or prudent and the alternative method will not result in adverse environmental effects.</li> <li>In marine waters, approval of discharges by the authorized officer will be based on a case-by-case review of environmental factors and consistency with the conditions of a National Pollutant Discharge Elimination System permit. Discharge of produced fluids will be prohibited at locations where currents and water depths, in combination with other conditions, are not adequate to prevent impacts to known biologically sensitive areas. Alternate disposal methods will require an National Pollutant Discharge Elimination System permit certified by the State.</li> </ol>	<p><b>A-7 Best Management Practice</b>  <u>Objective:</u> Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.  <u>Requirement/Standard:</u> Discharge of produced water in upland areas and marine waters is prohibited.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b>A-8 Required Operating Procedure</b>  <b>Northeast</b>  <u>Objective:</u> Minimize conflicts resulting from interaction between humans and bears during oil and gas activities.  <u>Requirement/Standard:</u> Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:</p> <ol style="list-style-type: none"> <li>Minimize attraction of bears to the drill sites.</li> <li>Organize layout of buildings and work areas to minimize human/bear interactions.</li> <li>Warn personnel of bears near or on drill sites and identify proper procedures to be followed.</li> </ol>	<p><b>A-8 Best Management Practice</b>  <u>Objective:</u> Minimize conflicts resulting from interaction between humans and bears during oil and gas activities.  <u>Requirement/Standard:</u> Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:</p> <ol style="list-style-type: none"> <li>Minimize attraction of bears to the work sites.</li> <li>Organize layout of buildings and work sites to minimize human/bear interactions.</li> <li>Warn personnel of bears near or on work sites and identify proper procedures to be followed.</li> </ol>			

**WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY**

<b>Alternative A</b>	<b>Alternative B-1</b>	<b>Alternative B-2 Preferred Alternative</b>	<b>Alternative C</b>	<b>Alternative D</b>
<p>d. Establish procedures, if authorized, to discourage bears from approaching the drill site.</p> <p>e. Provide contingencies in the event bears do not leave the site or cannot be discouraged by authorized personnel.</p> <p>f. Discuss proper storage and disposal of materials that may be toxic to bears.</p> <p>g. Provide a systematic record of bears on the site and in the immediate area.</p> <p>h. Encourage lessee/permittee to participate and comply with the Incidental Take Program under the Marine Mammal Protection Act.<sup>3</sup></p> <p><b>Northwest</b>  <u>Objective:</u> Minimize conflicts resulting from interaction between humans and bears during leasing and associated activities.  <u>Requirement/Standard:</u> Same, except lacks subpart h.</p>				
<p><b>A-9 Required Operating Procedure</b>  <b>Northeast</b>  <u>Objective:</u> Reduce air quality impacts.  <u>Requirement/Standard:</u> Concurrent with implementation of the requirement for adoption of use of ultra low sulfur diesel in the “North Slope Ultra Low Sulfur Diesel Transition Agreement,” as amended, between the State of Alaska, BP Exploration (Alaska) Inc. and ConocoPhillips Alaska, Inc., or implementation of federal regulations requiring use of “ultra low sulfur” diesel within NPR-A if these regulations take effect prior to the transition agreement, all oil and gas operations (vehicles and equipment) that burn diesel fuels must use “ultra low sulfur” diesel as defined by the Alaska Department of Environmental Conservation-Division of Air Quality, subject to its availability. The use of alternative diesel fuel may be considered and approved by BLM’s authorized officer on a case-by-case basis.</p> <p><b>Northwest</b>  No comparable provision.</p>		<p>d. Establish procedures, if authorized, to discourage bears from approaching the work site.</p> <p>e. Provide contingencies in the event bears do not leave the work site or cannot be discouraged by authorized personnel.</p> <p>f. Discuss proper storage and disposal of materials that may be toxic to bears.</p> <p>g. Provide a systematic record of bears on the work site and in the immediate area.</p>		
		<p><b>A-9 Best Management Practice</b>  <u>Objective:</u> Reduce air quality impacts.  <u>Requirement/Standard:</u> All oil and gas operations (vehicles and equipment) that burn diesel fuels must use “ultra-low sulfur” diesel as defined by the Alaska Department of Environmental Conservation-Division of Air Quality.</p>		

<sup>3</sup> An analogous subparagraph A-8h is not included in Alternatives B through D. The polar bear is now provided protection under both the MMPA and the ESA.

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>A-10 Required Operating Procedure Northeast</b></p> <p><u>Objective:</u> Prevent unnecessary or undue degradation of the lands and protect health.</p> <p><u>Requirement/Standard:</u> This measure includes the following elements:</p> <ul style="list-style-type: none"> <li>a. Prior to initiation of a NEPA analysis for an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the lessee shall obtain on-site background air quality and meteorology data to be used in predicting potential future air quality conditions resulting from the proposed action and other reasonably foreseeable future actions. Monitoring should examine the background concentration of criteria air pollutants. Monitoring data collection must meet BLM standards for quality control and quality assurance before use. (The BLM may consult with the applicant and appropriate federal, State, and/or local agencies to avoid duplication of effort.) The monitoring mechanism for the predevelopment stage would be one that does not require an on-site air polluting emission source. If background data exists that the authorized officer determines is representative of that existing at the proposed development site, the authorized officer may waive this requirement.</li> <li>b. For developments with a potential for air pollutant emissions as described in subparagraph (a), the lessee shall prepare (and submit for BLM approval) a complete list of reasonably foreseeable air pollutant emissions, including, but not limited to criteria air pollutants and hazardous air pollutants designated under authority of the Clean Air Act, as amended.</li> <li>c. For developments with a potential for air pollutant emissions as described in subparagraph (a) and informed by the pollutant emissions identified in subparagraph (b), the authorized officer may require air quality modeling using BLM-approved atmospheric dispersion models that are appropriate for local conditions. (The authorized officer may consult with the applicant and appropriate federal, State, and/or local agencies regarding modeling to inform his/her decision and avoid duplication of effort.) The modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments, as well as other scientifically defensible significance thresholds (such as impacts to air quality related values, incremental cancer risks, etc.).</li> </ul>	<p><b>A-10 Best Management Practice</b></p> <p><u>Objective:</u> Prevent unnecessary or undue degradation of the lands and protect health.</p> <p><u>Requirement/Standard:</u> This measure includes the following elements:</p> <ul style="list-style-type: none"> <li>a. Prior to initiation of a NEPA analysis for an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source (hereafter project), the authorizing officer (BLM) may require the project proponent to provide a minimum of one year of baseline ambient air monitoring data for any pollutant(s) of concern as determined by BLM if no representative air monitoring data are available for the project area, or existing representative ambient air monitoring data are insufficient, incomplete, or do not meet minimum air monitoring standards set by the Alaska DEC or the EPA. If BLM determines that baseline monitoring is required, this pre-analysis data must meet Alaska DEC and EPA air monitoring standards, and cover the year immediately prior to the submittal. Pre-project monitoring may not be appropriate where the life of the project is less than one year.</li> <li>b. The BLM may require monitoring for the life of the project depending on the magnitude of potential air emissions from the project, proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by Alaska DEC or a federal land management agency), or population center, location within or proximity to a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during NEPA undertaken for the project.</li> <li>c. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the project proponent shall prepare (and submit for BLM approval) an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project, including reasonably foreseeable air pollutant emissions of criteria air pollutants, volatile organic compounds, hazardous air pollutants, and greenhouse gases estimated for each year for the life of the project. The BLM will use this estimated emissions inventory to identify pollutants of concern and to determine the appropriate level of air analysis to be conducted for the proposed project.</li> </ul>			



## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>d. Depending on the significance of the predicted impacts, a lessee proposing a central production facility or other facility with potentially significant impacts on air quality may be required to monitor air pollutant emissions and/or air quality impacts for at least one year of operation. Depending upon the initial monitoring results, the authorized officer may require additional monitoring.</p> <p>e. If monitoring indicates impacts would cause unnecessary or un-due degradation of the lands or fail to protect health (either directly or through use of subsistence resources), the authorized officer may require changes in the lessee's activities at any time to reduce these emissions, such as, but not limited to, use of cleaner-burning fuels or installation of additional emission control systems.</p> <p><b>Northwest</b> No comparable provision.</p>		<p>d. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the BLM may require the proponent to provide an emissions reduction plan that includes a detailed description of operator committed measures to reduce project related air pollutant emissions including, but not limited to greenhouse gases and fugitive dust.</p> <p>e. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the authorized officer may require air quality modeling for purposes of analyzing project direct, indirect or cumulative impacts to air quality. The BLM may require air quality modeling depending on the magnitude of potential air emissions from the project or activity, duration of the proposed action, proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by Alaska DEC or a federal land management agency), or population center, location within a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during NEPA undertaken for the project. The BLM will determine the information required for a project specific modeling analysis through the development of a modeling protocol for each analysis. The authorized officer will consult with appropriate federal, State, and/or local agencies regarding modeling to inform his/her modeling decision and avoid duplication of effort. The modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments, as well as other scientifically defensible significance thresholds (such as impacts to air quality related values, incremental cancer risks, etc.).</p> <p>f. The BLM may require air quality mitigation measures and strategies within its authority (and in consultation with local, state, federal, and tribal agencies with responsibility for managing air resources) in addition to regulatory requirements and proponent committed emission reduction measures, and for emission sources not otherwise regulated by Alaska DEC or EPA, if the air quality analysis shows potential future impacts to NAAQS or AAAQS or impacts above specific levels of concern for air quality related values (AQRVs).</p> <p>g. If ambient air monitoring indicates that project-related emissions are causing or contributing to impacts that would cause unnecessary or undue degradation of the lands, cause exceedances of NAAQS, or fail to protect health (either directly or through use of subsistence resources), the authorized officer may require changes in activities at any time to reduce these emissions to comply with the NAAQS and/or minimize impacts to AQRVs. Within the scope of BLM's authority, the BLM may require additional emission control strategies to minimize or reduce impacts to air quality.</p> <p>h. <b>(Alternative B-2 only)</b> Publicly available reports on air quality baseline monitoring, emissions inventory, and modeling results developed in conformance with this best management procedure shall be provided by the project proponent to the North Slope Borough and to local communities and tribes in a timely manner.</p>		

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>A-11 Required Operating Procedure</b></p> <p><b>Northeast</b>  <b>Objective:</b> Ensure that permitted activities do not create human health risks through contamination of subsistence foods.  <b>Requirement/Standard:</b> A lessee proposing a permanent oil and gas development shall design and implement a monitoring study of contaminants in locally-used subsistence foods. The monitoring study shall examine subsistence foods for all contaminants that could be associated with the proposed development. The study shall identify the level of contaminants in subsistence foods prior to the proposed permanent oil and gas development and monitor the level of these contaminants throughout the operation and abandonment phases of the development. If ongoing monitoring detects a measurable and persistent increase in a contaminant in subsistence foods, the lessee shall design and implement a study to determine how much, if any, of the increase in the contaminant in subsistence foods originates from the lessee's activities. If the study determines that a portion of the increase in contamination in subsistence foods is caused by the lessee's activities, the authorized officer may require changes in the lessee's processes to reduce or eliminate emissions of the contaminant. The design of the study/studies must meet the approval of the authorized officer. The authorized officer may consult with appropriate federal, State, and North Slope Borough agencies prior to approving the study/studies design. The authorized officer may require/authorize changes in the design of the studies throughout the operations and abandonment period, or terminate or suspend studies if results warrant.</p> <p><b>Northwest</b>  No comparable provision.</p>	<p><b>A-11 Best Management Practice</b></p> <p><b>Objective:</b> Ensure that permitted activities do not create human health risks through contamination of subsistence foods.</p> <p><b>Requirement/Standard:</b> A lessee proposing a permanent oil and gas development shall design and implement a monitoring study of contaminants in locally-used subsistence foods. The monitoring study shall examine subsistence foods for all contaminants that could be associated with the proposed development. The study shall identify the level of contaminants in subsistence foods prior to the proposed permanent oil and gas development and monitor the level of these contaminants throughout the operation and abandonment phases of the development. If ongoing monitoring detects a measurable and persistent increase in a contaminant in subsistence foods, the lessee shall design and implement a study to determine how much, if any, of the increase in the contaminant in subsistence foods originates from the lessee's activities. If the study determines that a portion of the increase in contamination in subsistence foods is caused by the lessee's activities, the authorized officer may require changes in the lessee's processes to reduce or eliminate emissions of the contaminant. The design of the study/studies must meet the approval of the authorized officer. The authorized officer may consult with appropriate federal, State, and North Slope Borough agencies prior to approving the study/studies design. The authorized officer may require/authorize changes in the design of the studies throughout the operations and abandonment period, or terminate or suspend studies if results warrant.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			



**WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC SAFETY**

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
No comparable provision.	<p><b>A-12 Best Management Practice</b></p> <p><b>NOTE:</b> This best management practice is applicable only to Alternative B-2. There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> To minimize negative health impacts associated with oil spills.</p> <p><u>Requirement/Standard:</u> If an oil spill with potential impacts to public health occurs, the BLM, in undertaking its oil spill responsibilities, will consider:</p> <ol style="list-style-type: none"> <li>Immediate health impacts and responses for affected communities and individuals.</li> <li>Long-term monitoring for contamination of subsistence food sources.</li> <li>Long-term monitoring of potential human health impacts.</li> <li>Perceptions of contamination and subsequent changes in consumption patterns.</li> <li>Health promotion activities and communication strategies to maintain the consumption of traditional food.</li> </ol>			

**WATER USE FOR PERMITTED ACTIVITIES**

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>B-1 Required Operating Procedure</b></p> <p><b>Northeast</b></p> <p><u>Objective:</u> Maintain populations of, and adequate habitat for, fish and invertebrates.</p> <p><u>Requirement/Standard:</u> Water withdrawal from rivers and streams during winter is prohibited.</p> <p><b>Northwest</b></p> <p>Same</p>	<p><b>B-1 Best Management Practice</b></p> <p><u>Objective:</u> Maintain populations of, and adequate habitat for, fish and invertebrates.</p> <p><u>Requirement/Standard:</u> Withdrawal of unfrozen water from rivers and streams during winter is prohibited. The removal of ice aggregate from grounded areas <math>\leq 4</math>-feet deep may be authorized from rivers on a site-specific basis.</p>			
<p><b>B-2 Required Operating Procedure</b></p> <p><u>Objective:</u> Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish and invertebrates, and waterfowl.</p> <p><u>Requirement/Standard:</u> Water withdrawal from lakes may be authorized on a site-specific basis depending on water volume and depth, and fish population and species diversification. Current water withdrawal requirements specify:</p> <ol style="list-style-type: none"> <li>Lakes that are <math>\geq 7</math> feet with sensitive fish (any fish except ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; lakes that are between 5 and 7 feet with sensitive fish,</li> </ol>	<p><b>B-2 Best Management Practice</b></p> <p><u>Objective:</u> Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish, invertebrates, and waterfowl.</p> <p><u>Requirement/Standard:</u> Withdrawal of unfrozen water from lakes and the removal of ice aggregate from grounded areas <math>\leq 4</math>-feet deep may be authorized on a site-specific basis depending on water volume and depth and the waterbody's fish community. Current water use requirements are:</p> <ol style="list-style-type: none"> <li>Lakes with sensitive fish (i.e., any fish except ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; only ice aggregate may be removed from lakes that are <math>\leq 7</math>-feet deep.</li> </ol>			

## WATER USE FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>water available for withdrawal would be calculated on a case-by-case basis.</p> <p>b. Lakes that are <math>\geq 5</math> feet with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet.</p> <p>c. Any lake with no fish present, regardless of depth, water available for withdrawal is up to 35% as specified within the permit.</p> <p>d. A water-monitoring plan may be required to assess drawdown and water quality changes before, during, and after pumping any fish-bearing lake or lake of special concern.</p> <p>e. The removal of naturally grounded ice may be authorized from lakes and shallow rivers on a site-specific basis depending upon its size, water volume, and depth, and fish population and species diversification.</p> <p>f. Removed ice aggregate shall be included in the 15% or 30% withdrawal limits—whichever is appropriate—unless otherwise approved.</p> <p>g. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. <b>Note:</b> All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Natural Resources. [<b>Note:</b> Responsibility in the State for such approval now rests with the Alaska Department of Fish and Game, Division of Habitat.]</p> <p>h. Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.</p> <p><b>Northwest</b>  <u>Objective:</u> Maintain natural hydrologic regimes in soils surrounding lakes and ponds and maintain populations of, and adequate habitat for, fish and invertebrates.  <u>Requirement/Standard:</u> Water withdrawal from lakes may be authorized on a site-specific basis depending on size, water volume, and depth, and fish population and species diversification. Current water withdrawal requirements specify:</p> <p>a. Water withdrawals from any fish bearing lake 7 feet or deeper shall be limited to 15 percent of the estimated free</p>		<p>b. Lakes with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet; only ice aggregate may be removed from lakes that are <math>\leq 5</math>.</p> <p>c. Lakes with no fish present, regardless of depth: water available for use is limited to 35% of total lake volume.</p> <p>d. In lakes where unfrozen water and ice aggregate are both removed, the total use shall not exceed the respective 15%, 30%, or 35% volume calculations.</p> <p>e. Additional modeling or monitoring may be required to assess water level and water quality conditions before, during, and after water use from any fish-bearing lake or lake of special concern.</p> <p>f. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. <b>Note:</b> All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Fish and Game, Division of Habitat.</p> <p>g. Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.</p>		

## WATER USE FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>water volume located beneath the ice.</p> <p>b. Water withdrawals from lakes with depths between 5 and 7 feet that contain only ninespine stickleback and/or Alaska blackfish are limited to up to 30 percent of the under-ice volume.</p> <p>c. Water withdrawal may be authorized from any lake if the proponent demonstrates that no fish exist in the lake.</p> <p>d. A water-monitoring plan may be required to assess drawdown and water quality changes before, during, and after pumping any fish-bearing lake.</p> <p>e. Same.</p> <p>f. Same.</p> <p>g. Any water intake structures in fish-bearing waters shall be designed, operated and maintained to prevent fish entrapment, entrainment, or injury.</p> <p>h. Same.</p>				

## WINTER OVERLAND MOVES AND SEISMIC WORK

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
The following required operating procedures/best management practices apply to overland moves, seismic work, and any similar cross-country vehicle use of heavy equipment on non-roaded surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.				
<p><b><i>C-1 Required Operating Procedure</i></b></p> <p><b>Northeast</b></p> <p><b>Objective:</b> Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.</p> <p><b>Requirement/Standard:</b></p> <p>a. Cross-country use of heavy equipment and seismic activities is prohibited within 0.5 mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.</p> <p>b. Cross-country use of heavy equipment and seismic activities is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators shall consult with the USFWS and/or NOAA Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.</p> <p><b>Northwest</b></p> <p>Same.</p>	<p><b><i>C-1 Best Management Practice</i></b></p> <p><b>Objective:</b> Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.</p> <p><b>Requirement/Standard:</b></p> <p>a. Cross-country use of heavy equipment and seismic activity is prohibited within 0.5 mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.</p> <p>b. Cross-country use of heavy equipment and seismic activity is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators near coastal areas shall conduct a survey for potential polar bear dens and seal birthing lairs and consult with the USFWS and/or NOAA Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## WINTER OVERLAND MOVES AND SEISMIC WORK

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>C-2 Required Operating Procedure</b>  <b>Northeast</b>  <b>Objective:</b> Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.</p> <p><u>Requirement/Standard:</u></p> <ol style="list-style-type: none"> <li>Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500 feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the authorized officer.</li> <li>Only low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. A list of approved vehicles can be obtained from the authorized officer. Limited use of tractors equipped with wide tracks or “shoes” will be allowed to pull trailers, sleighs or other equipment with approved undercarriage. <b>Note:</b> This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.</li> <li>Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.</li> <li>To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.</li> <li>The location of winter ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.</li> <li>Motorized ground-vehicle use within the Colville River Special Area associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within the Colville River Raptor, Passerine, and Moose Area from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain 0.5 mile away from known</li> </ol>	<p><b>C-2 Best Management Practice</b>  <b>Objective:</b> Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.</p> <p><u>Requirement/Standard:</u></p> <ol style="list-style-type: none"> <li>Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500 feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the authorized officer.</li> <li>Low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. Low-ground-pressure vehicles shall be selected and operated in a manner that eliminates direct impacts to the tundra by shearing, scraping, or excessively compacting the tundra mat. <b>Note:</b> This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.</li> <li>Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.</li> <li>To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.</li> <li>The location of ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.</li> <li>Motorized ground-vehicle use within the Colville River Special Area associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within an area that extends 1 mile west or northwest of the bluffs of the Colville River, and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and tributaries of the Kogosukruk River from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain 0.5 mile away from known raptor nesting sites, unless authorized by the authorized officer.</li> </ol>			

## WINTER OVERLAND MOVES AND SEISMIC WORK

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>raptor nesting sites, unless authorized by the authorized officer. [The Colville River Raptor, Passerine, and Moose Area extends 1 mile west or northwest of the bluffs of the Colville River, from approximately Ocean Point to the southern end of the Northeast NPR-A planning area and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and tributaries of the Kogosukruk River.]</p> <p><b>Northwest</b> Same, except lacks subpart f.</p> <p><b>Colville River Special Area Management Plan Protection 7</b> <u>Objective:</u> Minimize disturbance impacts to nesting arctic peregrine falcons in the Colville River Special Area from motorized ground-vehicle use. <u>Requirement/Standard</u> Motorized ground-vehicle use within the Colville River Special Area authorized by BLM shall be minimized within 1 mile of any known arctic peregrine falcon nest from April 15 through August 15. Such use shall be prohibited within 0.5 mile of nests during the same period unless an exception is granted by BLM.</p>	(Colville River Special Area Management Plan Protection 7 would not be changed.)			
<p><b>C-3 Required Operating Procedure</b> <b>Northwest</b> <u>Objective:</u> Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality and protect stream banks. <u>Requirement/Standard:</u> Crossing of waterway courses shall be made using a low-angle approach. Snow and ice bridges shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris. Except at approved crossings, operators are encouraged to travel a minimum of 100 feet from known overwintering fish streams and lakes.</p> <p><b>Northwest</b> <u>Objective:</u> Maintain natural spring runoff patterns, avoid flooding, prevent streambed sedimentation, protect water quality and protect stream banks. <u>Requirement/Standard:</u> Crossing of waterway courses shall be made using a low-angle approach. Snow and ice bridges shall be removed, breached or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris.</p>	<p><b>C-3 Best Management Practice</b>  <u>Objective:</u> Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality and protect stream banks.  <u>Requirement/Standard:</u> Crossing of waterway courses shall be made using a low-angle approach. Crossings that are reinforced with additional snow or ice (“bridges”) shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris.</p>			

## WINTER OVERLAND MOVES AND SEISMIC WORK

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>C-4 Required Operating Procedure</b></p> <p><b>Northeast</b>  <u>Objective:</u> Avoid additional freeze-down of deep-water pools harboring over-wintering fish and invertebrates used by fish.  <u>Requirement/Standard:</u> Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers and streams shall be crossed at shallow riffles from point bar to point bar whenever possible.</p> <p><b>Northwest</b>  <u>Objective:</u>  Same  <u>Requirement/Standard:</u> Travel up and down streambeds is prohibited. Rivers and streams shall be crossed at shallow riffles from point bar to point bar whenever possible.</p>	<p><b>C-4 Best Management Practice</b></p> <p><u>Objective:</u> Avoid additional freeze-down of deep-water pools harboring over-wintering fish and invertebrates used by fish.  <u>Requirement/Standard:</u> Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers, streams, and lakes shall be crossed at areas of grounded ice whenever possible.</p>			
No comparable provision.	<p><b>C-5 Best Management Practice</b></p> <p><b>NOTE: This best management practice is only applicable to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Minimize the effects of high-intensity acoustic energy from seismic surveys on fish..</p> <p><u>Requirement/Standard:</u></p> <ul style="list-style-type: none"> <li>a. When conducting vibroseis-based surveys above potential fish overwintering areas (water 6 feet deep or greater, ice plus liquid depth), operators shall follow recommendations by Morris and Winters (2005): only a single set of vibroseis shots should be conducted if possible; if multiple shot locations are required, these should be conducted with minimal delay; multiple days of vibroseis activity above the same overwintering area should be avoided if possible.</li> <li>b. When conducting air gun-based surveys in freshwater, operators shall follow standard marine mitigation measures that are applicable to fish (e.g., Minerals Management Service 2006): operators will use the lowest sound levels feasible to accomplish their data-collection needs; ramp-up techniques will be utilized (ramp-up involves the gradual increase in emitted sound levels beginning with firing a single air gun and gradually adding air guns until the desired operating level of the full array is obtained).</li> <li>c. When conducting explosive-based surveys, operators shall follow setback distances from fish-bearing waterbodies based on requirements outlined by Alaska Department of Fish and Game (1991).</li> </ul>			

## OIL AND GAS EXPLORATORY DRILLING

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>D-1 Lease Stipulation</i></b>  <b>Northeast</b>  <u>Objectives:</u> Protect fish-bearing rivers, streams, and lakes from blowouts and minimize alteration of riparian habitat.  <u>Requirement/Standard:</u> Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes.</p> <p><b>Northwest</b>  <u>Objectives:</u> Same.  <u>Requirement/Standard:</u> Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes, except where the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative.</p>	<p><b><i>D-1 Lease Stipulation</i></b>  <u>Objectives:</u> Protect fish-bearing rivers, streams, and lakes from blowouts and minimize alteration of riparian habitat.  <u>Requirement/Standard:</u> Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b><i>D-2 Lease Stipulation</i></b>  <b>Northeast</b>  <u>Objective:</u> Minimize surface impacts from exploratory drilling.  <u>Requirement/Standard:</u> Construction of permanent or gravel oil and gas facilities shall be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Exploratory drilling shall be limited to temporary facilities such as ice pads, ice roads, ice airstrips, temporary platforms, etc., unless the lessee demonstrates that construction of permanent facilities such as gravel airstrips, storage pads, and connecting roads is environmentally preferable or necessary to carry out exploration more economically.</p>	<p><b><i>D-2 Lease Stipulation</i></b>  <u>Objective:</u> Minimize surface impacts from exploratory drilling.  <u>Requirement/Standard:</u> Construction of permanent or gravel oil and gas facilities shall be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			



## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>E-1 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Protect subsistence use and access to traditional subsistence hunting and fishing areas and minimize the impact of oil and gas activities on air, land, water, fish and wildlife resources.  <u>Requirement/Standard:</u> All roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to protect subsistence use and access to traditional subsistence hunting and fishing areas. The authorized officer will consult with appropriate federal, State, and North Slope Borough regulatory and resources agencies prior to approving construction of roads. Subject to approval by the authorized officer, the construction, operation and maintenance of oil field roads is the responsibility of the lessee unless the construction, operation, and maintenance of roads are assumed by the appropriate governing entity.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> All roads must be designed, constructed, maintained and operated to minimize environmental impacts and to protect subsistence use and access to traditional subsistence hunting and fishing areas. Subject to approval by the authorized officer, the construction, operation and maintenance of oil field roads is the responsibility of the lessee. <b>Note:</b> This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes. This preserves the opportunity to plan, design and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within the NPR-A.</p>	<p><b><i>E-1 Best Management Practice</i></b>  <u>Objective:</u> Protect subsistence use and access to subsistence hunting and fishing areas and minimize the impact of oil and gas activities on air, land, water, fish and wildlife resources.</p> <p><u>Requirement/Standard:</u> All roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to protect subsistence use and access to subsistence hunting and fishing areas. The authorized officer will consult with appropriate federal, State, and North Slope Borough regulatory and resources agencies prior to approving construction of roads. Subject to approval by the authorized officer, the construction, operation and maintenance of oil and gas field roads is the responsibility of the lessee unless the construction, operation, and maintenance of roads are assumed by the appropriate governing entity.</p>			



## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>E-2 Lease Stipulation Northeast</b>  <u>Objective:</u> Protect fish-bearing waterbodies, water quality, and aquatic habitats.  <u>Requirement/Standard:</u> Permanent oil and gas facilities, including roads, airstrips, and pipelines, are prohibited upon or within 500 feet as measured from the ordinary high watermark. Essential pipeline and road crossings will be permitted on a case-by-case basis. <b>Note:</b> Also refer to Area-Specific Stipulations and Required Operating Procedures for Rivers Area (<i>Lease Stipulation K-1</i>) and Deep Water Lakes (<i>Lease Stipulation K-2</i>).  Construction camps are prohibited on frozen lakes and river ice. Siting of construction camps on river sand and gravel bars is allowed and, where feasible, encouraged. Where leveling of trailers or modules is required and the surface has a vegetative mat, leveling shall be accomplished through blocking rather than use of a bulldozer.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> The design and location of permanent oil and gas facilities within 500 feet of fish-bearing or 100 feet of non-fish-bearing waterbodies will only be approved on a case-by-case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal. (<b>Note:</b> Also refer to Area-Specific Stipulations and Required Operating Procedures for Rivers (Stipulation K-1) and Deep Water Lakes (Stipulation K-2)).</p>	<p><b>E-2 Lease Stipulation</b>  <u>Objective:</u> Protect fish-bearing waterbodies, water quality, and aquatic habitats.  <u>Requirement/Standard:</u> Permanent oil and gas facilities, including roads, airstrips, and pipelines, are prohibited upon or within 500 feet as measured from the ordinary high watermark of fish-bearing waterbodies. Essential pipeline and road crossings will be permitted on a case-by-case basis. <b>Note:</b> Also refer to Area-Specific Stipulations and Best Management Practices for Rivers Area (<i>Lease Stipulation K-1</i>) and Deep Water Lakes (<i>Lease Stipulation K-2</i>).  Construction camps are prohibited on frozen lakes and river ice. Siting of construction camps on river sand and gravel bars is allowed and encouraged. Where leveling of trailers or modules is required and the surface has a vegetative mat, leveling shall be accomplished through blocking rather than use of a bulldozer.</p>			
<p><b>E-3 Lease Stipulation Northeast</b>  <u>Objective:</u> Maintain free passage of marine and anadromous fish and protect subsistence use and access to traditional subsistence hunting and fishing.  <u>Requirement/Standard:</u> Causeways and docks are prohibited in river mouths or deltas. Artificial gravel islands and bottom-founded structures are prohibited in river mouths or active stream channels on river deltas. Causeways, docks, artificial islands, and bottom-founded drilling structures shall be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program, developed in consultation with appropriate federal, State, and</p>	<p><b>E-3 Lease Stipulation</b>  <u>Objective:</u> Maintain free passage of marine and anadromous fish and protect subsistence use and access to subsistence hunting and fishing.  <u>Requirement/Standard:</u> Causeways and docks are prohibited in river mouths or deltas. Artificial gravel islands and bottom-founded structures are prohibited in river mouths or active stream channels on river deltas. Causeways, docks, artificial islands, and bottom-founded drilling structures shall be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program, developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, shall be required to address the objectives of water quality and free passage of fish.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>North Slope Borough regulatory and resource agencies, shall be required to address the objectives of water quality and free passage of fish.</p> <p><b>Northwest</b>  <u>Objective:</u> Maintain free passage of marine and anadromous fish, and protect subsistence use and access to traditional subsistence hunting and fishing.  <u>Requirement/Standard:</u> Causeways and docks are prohibited in river mouths or deltas. Artificial gravel islands and bottom-founded structures are prohibited in river mouths or active stream channels on river deltas. Causeways, docks, artificial islands, and bottom-founded structures shall be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program may be required to address the objectives of water quality and free passage of fish.</p>				
<p><b>E-4 Required Operating Procedure</b>  <b>Northeast</b>  <u>Objective:</u> Minimize the potential for pipeline leaks, the resulting environmental damage, and industrial accidents.  <u>Requirement/Standard:</u> All pipelines shall be designed, constructed, and operated under an authorized officer-approved quality assurance/quality control plan that is specific to the product transported and shall be constructed to accommodate the best available technology for detecting and preventing corrosion or mechanical defects during routine structural integrity inspections.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> All pipelines shall be designed, constructed, and operated under an authorized officer-approved quality assurance/quality control plan that is specific to the product transported.</p>	<p><b>E-4 Best Management Practice</b>  <u>Objective:</u> Minimize the potential for pipeline leaks, the resulting environmental damage, and industrial accidents.  <u>Requirement/Standard:</u> All pipelines shall be designed, constructed, and operated under an authorized officer-approved quality assurance/quality control plan that is specific to the product transported and shall be constructed to accommodate the best available technology for detecting and preventing corrosion or mechanical defects during routine structural integrity inspections.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>E-5 Required Operating Procedure</b> <b>Northeast</b> <u>Objective:</u> Minimize impacts of the development footprint. <u>Requirement/Standard:</u> Facilities shall be designed and located to minimize the development footprint to the maximum extent practicable considering environmental, economic, safety, and social impacts. Issues and methods that are to be considered include: (a) use of maximum feasible extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads; (b) sharing facilities with existing development when prudent and technically feasible; (c) collocation of all oil and gas facilities, except airstrips, docks, and seawater-treatment plants, with drill pads; (d) integration of airstrips with roads; (e) use of gravel-reduction technologies, e.g., insulated or pile-supported pads. <b>Note:</b> Where aircraft traffic is a concern, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations.</p> <p><b>Northwest</b> <u>Objective:</u> Same. <u>Requirement/Standard:</u> Facilities shall be designed and located to minimize development footprint to the maximum extent practicable considering environmental, economic, and social impacts. <b>Note:</b> Where aircraft traffic is an issue, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations.</p>	<p><b>E-5 Best Management Practice</b> <u>Objective:</u> Minimize impacts of the development footprint. <u>Requirement/Standard:</u> Facilities shall be designed and located to minimize the development footprint. Issues and methods that are to be considered include: (a) use of maximum extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads; (b) sharing facilities with existing development; (c) collocation of all oil and gas facilities, except airstrips, docks, and seawater-treatment plants, with drill pads; (d) integration of airstrips with roads; (e) use of gravel-reduction technologies, e.g., insulated or pile-supported pads, (f) coordination of facilities with infrastructure in support of offshore development. <b>Note:</b> Where aircraft traffic is a concern, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations.</p>			
<p><b>E-6 Required Operating Procedure</b> <b>Northeast</b> <u>Objective:</u> Reduce the potential for ice-jam flooding, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage. <u>Requirement/Standard:</u> Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, reduce erosion, maintain natural drainage, and minimize adverse effects to natural stream flow. <b>Note:</b> Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.</p>	<p><b>E-6 Best Management Practice</b> <u>Objective:</u> Reduce the potential for ice-jam flooding, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage. <u>Requirement/Standard:</u> Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, reduce erosion, maintain natural drainage, and minimize adverse effects to natural stream flow. <b>Note:</b> Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.  (Text is same as in Northeast NPR-A 2008 Record of Decision)</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>Northwest</b>  <u>Objective:</u> Reduce the potential for ice-jam flooding, erosion, alteration of natural drainage patterns, and restriction of fish passage.  <u>Requirement/Standard:</u> Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, maintain natural drainage, and minimal adverse effects to natural stream flow.  <b>Note:</b> Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.</p>				
<p><b><i>E-7 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Minimize disruption of caribou movement and subsistence use.  <u>Requirement/Standard:</u> Pipelines and roads shall be designed to allow the free movement of caribou and the safe, unimpeded passage of the public while participating in traditional subsistence activities. Listed below are the accepted design practices:  a. Above ground pipelines shall be elevated a minimum of 7 feet as measured from the ground to the bottom of the pipeline at vertical support members.  b. In areas where facilities or terrain may funnel caribou movement, ramps over pipelines, buried pipelines, or pipelines buried under roads may be required by the authorized officer after consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility).  c. A minimum distance of 500 feet between pipelines and roads shall be maintained. Separating roads from pipelines may not be feasible within narrow land corridors between lakes and where pipelines and roads converge on a drill pad. Where it is not feasible to separate pipelines and roads, alternative pipeline routes, designs and possible burial within the road will be considered by the authorized officer.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Same, except:  c. A minimum distance of 500 feet between pipelines and roads should be maintained when feasible. Separating roads from</p>	<p><b><i>E-7 Best Management Practice</i></b>  <u>Objective:</u> Minimize disruption of caribou movement and subsistence use.  <u>Requirement/Standard:</u> Pipelines and roads shall be designed to allow the free movement of caribou and the safe, unimpeded passage of the public while participating in subsistence activities. Listed below are the accepted design practices:  a. Above-ground pipelines shall be elevated a minimum of 7 feet as measured from the ground to the bottom of the pipeline at vertical support members.  b. In areas where facilities or terrain may funnel caribou movement, ramps over pipelines, buried pipelines, or pipelines buried under roads may be required by the authorized officer after consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility).  c. A minimum distance of 500 feet between pipelines and roads shall be maintained. Separating roads from pipelines may not be feasible within narrow land corridors between lakes and where pipelines and roads converge on a drill pad. Where it is not feasible to separate pipelines and roads, alternative pipeline routes, designs and possible burial within the road will be considered by the authorized officer.  d. Above-ground pipelines shall have a non-reflective finish.</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
pipelines may not be feasible within narrow land corridors between lakes and where pipelines and roads converge on a drill pad.				
<p><b><i>E-8 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Minimize the impact of mineral materials mining activities on air, land, water, fish, and wildlife resources.  <u>Requirement/Standard:</u> Gravel mine site design and reclamation will be in accordance with a plan approved by the authorized officer. The plan shall be developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies and consider:</p> <ul style="list-style-type: none"> <li>a. Locations outside the active floodplain.</li> <li>b. Design and construction of gravel mine sites within active floodplains to serve as water reservoirs for future use.</li> <li>c. Potential use of the site for enhancing fish and wildlife habitat.</li> </ul> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Gravel mine site design and reclamation will be in accordance with a plan approved by the authorized officer. The plan shall consider:</p> <ul style="list-style-type: none"> <li>a. Locations outside the active floodplain.</li> <li>b. Design and construction of gravel mine sites within active floodplains to serve as water reservoirs for future use.</li> <li>c. Potential use of site for enhancing fish and wildlife habitat.</li> </ul>	<p><b><i>E-8 Best Management Practice</i></b>  <u>Objective:</u> Minimize the impact of mineral materials mining activities on air, land, water, fish, and wildlife resources.  <u>Requirement/Standard:</u> Gravel mine site design and reclamation will be in accordance with a plan approved by the authorized officer. The plan shall be developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies and consider:</p> <ul style="list-style-type: none"> <li>a. Locations outside the active floodplain.</li> <li>b. Design and construction of gravel mine sites within active floodplains to serve as water reservoirs for future use.</li> <li>c. Potential use of the site for enhancing fish and wildlife habitat.</li> <li>d. Potential storage and reuse of sod/overburden for the mine site or at other disturbed sites on the North Slope.</li> </ul>			
<p><b><i>E-9 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Avoidance of human-caused increases in populations of predators of ground-nesting birds.  <u>Requirement/Standard:</u></p> <ul style="list-style-type: none"> <li>a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the authorized officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites.</li> <li>b. Feeding of wildlife is prohibited and will be subject to non-compliance regulations.</li> </ul>	<p><b><i>E-9 Best Management Practice</i></b>  <u>Objective:</u> Avoidance of human-caused increases in populations of predators of ground-nesting birds.  <u>Requirement/Standard:</u></p> <ul style="list-style-type: none"> <li>a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the authorized officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites.</li> <li>b. Feeding of wildlife is prohibited and will be subject to non-compliance regulations.</li> </ul> <p>(Text is same as in Northeast NPR-A 2008 Record of Decision)</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the authorized officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites.</p>				
<p><b><i>E-10 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.  <u>Requirement/Standard:</u> Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Except for safety lighting, illumination of higher structures shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward. All drilling structures, production facilities, and other structures that exceed 20 feet shall be illuminated as outlined above.</p>	<p><b><i>E-10 Best Management Practice</i></b>  <u>Objective:</u> Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.</p> <p><u>Requirement/Standard:</u> Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b><i>E-11 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Minimize the take of species listed under the Endangered Species Act and minimize the disturbance of other species of interest from direct or indirect interaction with oil and gas facilities.  <u>Requirement/Standard:</u> In accordance with the guidance below, before the approval of facility construction, aerial surveys of the following species shall be conducted within any area proposed for development.  <i>Special Conditions in Spectacled and/or Steller's Eiders Habitats:</i>  a. Surveys shall be conducted by the lessee for at least 3 years before authorization of construction, if such construction is within the USFWS North Slope eider survey area and at least 1</p>	<p><b><i>E-11 Best Management Practice</i></b>  <u>Objective:</u> Minimize the take of bird species, particularly those listed under the Endangered Species Act and BLM Special Status Species from direct or indirect interaction with oil and gas facilities.</p> <p><u>Requirement/Standard:</u> In accordance with the guidance below, before the approval of facility construction, aerial surveys of the following species shall be conducted within any area proposed for development.</p> <p><i>Special Conditions in Spectacled and/or Steller's Eiders Habitats:</i>  a. Surveys shall be conducted by the lessee for at least 3 years before authorization of construction, if such construction is within the USFWS North Slope eider survey area and at least 1 year outside that area. Results of aerial surveys and habitat mapping may require additional ground nest surveys.</p>			



## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>year outside that area. Results of aerial surveys and habitat mapping may require additional ground nest surveys. Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol during the second week of June.</p> <p>b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall consult with the USFWS and BLM in the design and placement of roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, construction of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and introduction of high noise levels.</p> <p>c. To reduce the possibility of spectacled and/or Steller's eiders colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized:</p> <ol style="list-style-type: none"> <li>1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;</li> <li>2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or</li> <li>3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.</li> </ol> <p>d. To reduce the likelihood of spectacled and/or Steller's eiders colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS.</p>	<p>Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol. Information gained from these surveys shall be used to make infrastructure siting decisions as discussed in subparagraph b, below.</p> <p>b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall work with the USFWS and BLM early in the design process to site roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, location of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and management of high noise levels.</p> <p>c. To reduce the possibility of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only, other birds) colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized:</p> <ol style="list-style-type: none"> <li>1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;</li> <li>2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or</li> <li>3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.</li> </ol> <p>d. To reduce the likelihood of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only, other birds) colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS.</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><i>Special Conditions in Yellow-billed Loon Habitats:</i></p> <p>a. Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August.</p> <p>b. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot (500-meter) buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.</p> <p><b>Northwest</b> <u>Objective:</u> Same. <u>Requirement/Standard:</u> In accordance with the guidance below, before the approval of facility construction, aerial surveys of breeding pairs of the following species shall be conducted within any area proposed for development. <i>Spectacled and/or Steller's Eiders:</i> Same, except: c. To reduce the possibility of spectacled and/or Steller's eiders from striking above-ground utility lines (power and communication), such lines shall either be buried in access roads, or suspended on vertical support members, to the extent practical. Support wires associated with communication towers, radio antennas, and other similar facilities, shall be clearly marked along their entire length to improve visibility for low-flying birds. Such markings shall be jointly developed through consultation with USFWS.</p> <p><i>Yellow-billed Loon:</i> Same, except: b. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. Current accepted mitigation is a 1-mile buffer around all recorded nest sites and a minimum 500-meter buffer around the remainder of the lake shoreline. Development may be prohibited within buffers or activities curtailed while birds are present.</p>	<p><i>Special Conditions in Yellow-billed Loon Habitats:</i></p> <p>a. Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August.</p> <p>b. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot (500-meter) buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.</p> <p><i>Protections for Birds</i></p> <p>a. To reduce the possibility of birds colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases, which are to be few in number and limited in extent. Exceptions are limited to the following situations:</p> <ol style="list-style-type: none"> <li>1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;</li> <li>2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or</li> <li>3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.</li> </ol> <p>b. To reduce the likelihood of birds colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS.</p>			



## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>E-12 Required Operating Procedure</i></b></p> <p><b>Northeast</b>  <u>Objective:</u> Use ecological mapping as a tool to assess wildlife habitat before development of permanent facilities, to conserve important habitat types during development.  <u>Requirement/Standard:</u> An ecological land classification map of the development area shall be developed before approval of facility construction. The map will integrate geomorphology, surface form, and vegetation at a scale, level of resolution, and level of positional accuracy adequate for detailed analysis of development alternatives. The map shall be prepared in time to plan one season of ground-based wildlife surveys, if deemed necessary by the authorized officer, before approval of the exact facility location and facility construction.</p> <p><b>Northwest</b>  <u>Objective:</u> Use ecological mapping as a tool to assess wildlife habitat before development of permanent facilities, to conserve important habitat types, including wetlands, during development.  <u>Requirement/Standard:</u> Same.</p>	<p><b><i>E-12 Best Management Practice</i></b></p> <p><u>Objective:</u> Use ecological mapping as a tool to assess wildlife habitat before development of permanent facilities, to conserve important habitat types during development.</p> <p><u>Requirement/Standard:</u> An ecological land classification map of the development area shall be developed before approval of facility construction. The map will integrate geomorphology, surface form, and vegetation at a scale, level of resolution, and level of positional accuracy adequate for detailed analysis of development alternatives. The map shall be prepared in time to plan one season of ground-based wildlife surveys, if deemed necessary by the authorized officer, before approval of the exact facility location and facility construction.</p> <p>(Text is same as in Northeast NPR-A 2008 Record of Decision)</p>			
<p><b><i>E-13 Required Operating Procedure</i></b></p> <p><b>Northeast</b>  <u>Objective:</u> Protect cultural and paleontological resources.  <u>Requirement/Standard:</u> Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the authorized officer and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer.</p> <p><b>Northwest</b>            Same.</p>	<p><b><i>E-13 Best Management Practice</i></b></p> <p><u>Objective:</u> Protect cultural and paleontological resources.  <u>Requirement/Standard:</u> Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the authorized officer and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer.</p> <p>(Text is same as in Northeast NPR-A 2008 Record of Decision)</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>E-14 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Ensure the passage of fish at stream crossings.  <u>Requirement/Standard:</u> To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices outlined in “Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain” by McDonald et al. (1994), “Fundamentals of Culvert Design for Passage of Weak-Swimming Fish” by Behlke et al. (1991), and other generally accepted best management procedures prescribed by the authorized officer. To adhere to these best management practices, at least 3 years of hydrologic and fish data shall be collected by the lessee for any proposed crossing of a stream whose structure is designed to occur, wholly or partially, below the stream’s ordinary high watermark. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream.</p> <p><b>Northwest</b>  No comparable provision.</p>	<p><b><i>E-14 Best Management Practice</i></b>  <u>Objective:</u> Ensure the passage of fish at stream crossings.  <u>Requirement/Standard:</u> To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices outlined in “Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain” by McDonald et al. (1994), “Fundamentals of Culvert Design for Passage of Weak-Swimming Fish” by Behlke et al. (1991), and other generally accepted best management procedures prescribed by the authorized officer. To adhere to these best management practices, at least 3 years of hydrologic and fish data shall be collected by the lessee for any proposed crossing of a stream whose structure is designed to occur, wholly or partially, below the stream’s ordinary high watermark. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b><i>E-15 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Prevent or minimize the loss of nesting habitat for cliff nesting raptors.  <u>Requirement/Standard:</u>  a. Removal of greater than 100 cubic yards of sand and/or gravel from cliffs shall be prohibited.  b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.</p> <p><b>Northwest</b>  No comparable provision.</p> <p><b>Colville River Special Area Management Plan Protection 9</b>  <u>Objective:</u> Minimize impacts from sand and/or gravel extraction to arctic peregrine falcons in the Colville River Special Area.  <u>Requirement/Standard:</u> To reduce impacts to arctic peregrine falcons in the Colville River Special Area from sand or gravel extraction the following measures apply:</p>	<p><b><i>E-15 Best Management Practice</i></b>  <u>Objective:</u> Prevent or minimize the loss of nesting habitat for cliff nesting raptors.  <u>Requirement/Standard:</u>  a. Removal of greater than 100 cubic yards of bedrock outcrops, sand, and/or gravel from cliffs shall be prohibited.  b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p> <p><i>(Colville River Special Area Management Plan Protection 9 would not be changed.)</i></p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>a. Removal of greater than 100 cubic yards of sand and/or gravel from cliffs shall be prohibited.</p> <p>b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.</p>				
<p><b><i>E-16 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Prevent or minimize the loss of raptors due to electrocution by powerlines.  <u>Requirement/Standard:</u> Comply with the most up-to-date industry-accepted suggested practices for raptor protection on powerlines. Current accepted standards were published in “Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006” in 2006 by the Avian Power Line Interaction Committee and are updated as needed.</p> <p><b>Northwest</b>  No comparable provision.</p> <p><b>Colville River Special Area Management Plan-Protection 8</b>  <u>Objective:</u> Minimize impacts to arctic peregrine falcon in the CRSA from power lines.  <u>Requirement/Standard:</u> To minimize impacts to arctic peregrine falcons in the Colville River Special Area from the powerlines, construction projects will comply with the most up-to-date suggested practices for arctic peregrine falcon protection on powerlines. All powerlines and poles shall be designed and constructed in a manner which reflects safe configurations to prevent death of arctic peregrine falcons by electrocution.</p>	<p><b><i>E-16 Best Management Practice</i></b>  <u>Objective:</u> Prevent or minimize the loss of raptors due to electrocution by powerlines.  <u>Requirement/Standard:</u> Comply with the most up-to-date industry-accepted suggested practices for raptor protection on powerlines. Current accepted standards were published in “Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006” in 2006 by the Avian Power Line Interaction Committee and are updated as needed.  <i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p> <p><i>(Colville River Special Area Management Plan Protection 8 would not be changed.)</i></p>			
<p><b><i>E-17 Stipulation/Required Operating Procedure</i></b>  <b>Northeast</b>  <i>(This measure is to be incorporated as a stipulation in new and renewed leases. It is a required operating procedure for existing leases and will be required for any relevant permanent facilities.)</i>  <u>Objective:</u> Minimize impacts to important spectacled eider nesting habitat.  <u>Requirement/Standard:</u> With the exception of pipelines, no (a) permanent oil and gas facilities, (b) material sites, or (c) staging areas that would occupy land through more than one winter season would be permitted in spectacled eider nesting and breeding habitat identified by the USFWS as being “high” density</p>	<p><b><i>E-17 Stipulation/Best Management Practice</i></b>  No comparable provision. (See E-11 Best Management Practice)</p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>(≥1.06 eiders per square mile) using the best available long-term data from the Annual Eider Breeding Survey at the time development is proposed.</p> <p><b>Northwest</b> No comparable provision.</p>				
<p><b><i>E-18 Required Operating Procedure</i></b> <b>Northwest</b> <u>Objective:</u> Avoid and reduce temporary impacts to productivity from disturbance near Steller's and/or spectacled eider nests. <u>Requirement/Standard:</u> Ground-level activity (by vehicle or on foot) within 200 meters of occupied Steller's and/or spectacled eider nests, from June 1 through August 15, will be restricted to existing thoroughfares, such as pads and roads. Construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels within 200 meters of occupied Steller's and/or spectacled eider nests will be prohibited. In instances where summer (June 1 through August 15) support/construction activity must occur off existing thoroughfares, USFWS-approved nest surveys must be conducted during mid-June prior to the approval of the activity. Collected data would be used to evaluate whether the action could occur based on employment of a 200-meter buffer around nests or if the activity would be delayed until after mid-August once ducklings are mobile and have left the nest site. The BLM will also work with the USFWS to schedule oil spill response training in riverine, marine, and inter-tidal areas that occurs within 200 meters of shore outside sensitive nesting/brood-rearing periods or conduct nest surveys. The protocol and timing of nest surveys for Steller's and/or spectacled eiders will be determined in cooperation with the USFWS, and must be approved by the USFWS. Surveys should be supervised by biologists who have previous experience with Steller's and/or spectacled eider nest surveys.</p> <p><b>Northwest</b> No comparable provision.</p>	<p><b><i>E-18 Best Management Practice</i></b> <u>Objective:</u> Avoid and reduce temporary impacts to productivity from disturbance near Steller's and/or spectacled eider nests. <u>Requirement/Standard:</u> Ground-level activity (by vehicle or on foot) within 200 meters of occupied Steller's and/or spectacled eider nests, from June 1 through August 15, will be restricted to existing thoroughfares, such as pads and roads. Construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels within 200 meters of occupied Steller's and/or spectacled eider nests will be prohibited. In instances where summer (June 1 through August 15) support/construction activity must occur off existing thoroughfares, USFWS-approved nest surveys must be conducted during mid-June prior to the approval of the activity. Collected data will be used to evaluate whether the action could occur based on employment of a 200-meter buffer around nests or if the activity would be delayed until after mid-August once ducklings are mobile and have left the nest site. The BLM will also work with the USFWS to schedule oil spill response training in riverine, marine, and inter-tidal areas that occurs within 200 meters of shore outside sensitive nesting/brood-rearing periods or conduct nest surveys. The protocol and timing of nest surveys for Steller's and/or spectacled eiders will be determined in cooperation with the USFWS, and must be approved by the USFWS. Surveys should be supervised by biologists who have previous experience with Steller's and/or spectacled eider nest surveys.</p> <p><i>(Text is same as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## FACILITY DESIGN AND CONSTRUCTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
No comparable provision.	<p><b><i>E-19 Best Management Practice</i></b>  <u>Objective:</u> Provide information to be used in monitoring and assessing wildlife movements during and after construction.</p> <p><u>Requirement/Standard:</u> A representation, in the form of ArcGIS-compatible shape-files, of all new infrastructure construction shall be provided to the authorized officer. During the planning and permitting phase, shape-files representing proposed locations shall be provided. Within 6 months of construction completion, shape-files (within GPS accuracy) of all new infrastructure shall be provided. Infrastructure includes all gravel roads and pads, facilities built on pads, pipelines and independently constructed powerlines (as opposed to those incorporated in pipeline design). Gravel pads shall be included as polygon feature. Roads, pipelines, and powerlines may be represented as line features but must include ancillary data to denote width, number pipes, etc. Poles for power lines may be represented as point features. Ancillary data shall include construction beginning and ending dates.</p>			
No comparable provision.	<p><b><i>E-20 Best Management Practice</i></b></p> <p><b>NOTE:</b> This best management practice is only applicable to Alternative B-2. There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Manage permitted activities to meet Visual Resource Management class objectives described below.</p> <p><b>Class I:</b> Natural ecological changes and very limited management activity are allowed. The level of change to the characteristic landscape should be very low and must not attract attention.</p> <p><b>Class II:</b> The level of change to the characteristic landscape should be low. Management activities may be seen, but should not dominate the view of the casual observer. Any changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.</p> <p><b>Class III:</b> The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.</p> <p><b>Class IV:</b> The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize impacts through location and design by repeating form, line, color, and texture.</p> <p><u>Requirement/Standard:</u> At the time of application for construction of permanent facilities, the lessee/permittee shall, after consultation with the authorized officer, submit a plan to best minimize visual impacts, consistent with the Visual Resource Management class for the lands on which facilities would be located. A photo simulation of the proposed facilities may be a necessary element of the plan.</p>			

## USE OF AIRCRAFT FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>F-1 Required Operating Procedure Northeast</i></b>  <b>Objective:</b> Minimize the effects of low-flying aircraft on wildlife, traditional subsistence activities, and local communities.  <b>Requirement/Standard:</b> The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (<b>Note:</b> This required operating procedure is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the stipulations and required operating procedures. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.):</p> <ol style="list-style-type: none"> <li>Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within 0.5 mile of cliffs identified as raptor nesting sites from April 15 through August 15 and within 0.5 mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.</li> <li>Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer. The authorized officer will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.</li> <li>Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Proposed aircraft use plans should be reviewed by appropriate federal, State, and borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the authorized officer if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies</li> </ol>	<p><b><i>F-1 Best Management Practice</i></b>  <b>Objective:</b> Minimize the effects of low-flying aircraft on wildlife, subsistence activities, and local communities.  <b>Requirement/Standard:</b> The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (<b>Note:</b> This best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.):</p> <ol style="list-style-type: none"> <li>Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within 0.5 mile of cliffs identified as raptor nesting sites from April 15 through August 15 and within 0.5 mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.</li> <li>Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer. The BLM will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.</li> <li>Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Proposed aircraft use plans should be reviewed by appropriate federal, State, and borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the authorized officer if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered to allow larger aircraft to be employed, resulting in fewer flights to the facility.</li> </ol>			



## USE OF AIRCRAFT FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered so as to allow larger aircraft to be employed, resulting in fewer flights to the facility.</p> <p>d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.</p> <p>e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area [Map 2-1K] from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area [Map 2-1K] should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Same, except:  The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines:</p> <p>b. Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer.</p> <p>c. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered so as to allow larger aircraft to be employed, resulting in a fewer number of flights to the facility.</p> <p>e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Caribou Study Area (See Map 2-1KJ) from June 15 through July 31, unless doing so would endanger human life or violate safe flying practices.</p> <p>f. Aircraft shall maintain an altitude of at least 2,000 feet above</p>		<p>d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.</p> <p>e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area (Maps 2-3K and 2-4K, depending upon alternative) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area (Maps 2-3K or 2-4K) should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.</p> <p>f. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Utukok River Uplands Special Area from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. (<b>Note:</b> The boundary of the Utukok River Uplands Special Area differs among Alternatives B-1 through D. See Maps 2-2, 2-3, and 2-4.)</p> <p>g. (<b>Alternative B-2 only</b>) Hazing of wildlife by aircraft is prohibited. Pursuit of running wildlife is hazing. If wildlife begins to run as an aircraft approaches, the aircraft is too close and must break away.</p> <p>h. (<b>Alternative B-2 only</b>) Fixed wing aircraft used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 2,000 feet and a 0.5-mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices. Helicopters used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 3,000 feet and a 1-mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices.</p> <p>i. (<b>Alternative B-2 only</b>) Aircraft used as part of a BLM-authorized activity along the coast and shore fast ice zone shall maintain minimum altitude of 3,000 feet and a buffer of 1 mile from aggregations of seals, unless doing so would endanger human life or violate safe flying practices.</p>		



## USE OF AIRCRAFT FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>ground level (except for takeoffs and landings) over the Caribou Coastal Insect-Relief Areas (Map 91 in the Northwest NPR-A Final IAP/EIS [i.e., the 0.75-mile coastal area identified in Stipulation K-6]) from June 15 through July 31, unless doing so would endanger human life or violate safe flying practices.</p> <p><b>Colville River Special Area Management Plan-Protection 3</b>  <u>Objective:</u> Minimize the effects of low-flying aircraft on arctic peregrine falcons in the Colville River Special Area.</p> <p><u>Requirement/Standard:</u> To minimize disturbance to nesting arctic peregrine falcons, aircraft authorized by BLM are required to maintain an altitude of at least 1,500 feet above ground level when within 0.5 mile of cliffs identified as arctic peregrine falcon nesting sites from April 15 through August 15. This protection is not intended to restrict flights necessary to conduct wildlife surveys to obtain information necessary to satisfy wildlife data collection requirements. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p>	<p>(Colville River Special Area Management Plan Protection 3 would not be changed.)</p>			

## OIL AND GAS FIELD ABANDONMENT

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>G-1 Lease Stipulation</b></p> <p><b>Northeast</b>  <u>Objective:</u> Ensure the final disposition of the land meets the current and future needs of the public.  <u>Requirement/Standard:</u> Upon abandonment or expiration of the lease, all oil- and gas-related facilities shall be removed and sites rehabilitated to as near the original condition as practicable, subject to the review of the authorized officer. The authorized officer may determine that it is in the best interest of the public to retain some or all facilities. Within the Goose Molting Area, the authorized officer, when determining if it is in the best interest of the public to retain a facility, will consider the impacts of retention to molting geese and goose molting habitat.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Upon abandonment or expiration of the</p>	<p><b>G-1 Lease Stipulation</b></p> <p><u>Objective:</u> Ensure long-term reclamation of land to its previous condition and use.</p> <p><u>Requirement/Standard:</u> Prior to final abandonment, land used for oil and gas infrastructure—including but not limited to well pads, production facilities, access roads, and airstrips—shall be reclaimed to ensure eventual restoration of ecosystem function. The leaseholder shall develop and implement an abandonment and reclamation plan approved by the BLM. The plan shall describe short-term stability, visual, hydrological, and productivity objectives and steps to be taken to ensure eventual ecosystem restoration to the land's previous hydrological, vegetative, and habitat condition. The BLM may grant exceptions to satisfy stated environmental or public purposes.</p>			

## OIL AND GAS FIELD ABANDONMENT

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
lease, all oil- and gas-related facilities shall be removed and sites rehabilitated to as near the original condition as practicable, subject to the review of the authorized officer. The authorized officer may determine that it is in the best interest of the public to retain some or all facilities.				

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>H-1 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and oil and gas and related activities.  <u>Requirement/Standard:</u> Lessee/permittee shall consult directly with affected communities using the following guidelines:</p> <p>a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the North Slope Borough, and the National Petroleum Reserve-Alaska Subsistence Advisory Panel to discuss the siting, timing, and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities.</p> <p>b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to provide an adequate time for review and comment by the National Petroleum Reserve-Alaska Subsistence Advisory Panel and to allow time for formal government-to-government consultation with Native Tribal governments. The applicant shall submit documentation of its consultation efforts and a written plan that shows how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Operations plans must include a discussion of the potential effects of the proposed operation,</p>		<p><b><i>H-1 Best Management Practice</i></b>  <u>Objective:</u> Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and other activities.  <u>Requirement/Standard:</u> Lessee/permittee shall consult directly with affected communities using the following guidelines:</p> <p>a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the North Slope Borough, and the National Petroleum Reserve-Alaska Subsistence Advisory Panel to discuss the siting, timing and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes.</p> <p>b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to the National Petroleum Reserve-Alaska Subsistence Advisory Panel for review and comment. The applicant must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it.</p>		

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>and the proposed operation in combination with other existing or reasonably foreseeable operations.</p> <p>c. A subsistence plan addressing the following items must be submitted:</p> <ol style="list-style-type: none"> <li>1. A detailed description of the activity(ies) to take place (including the use of aircraft).</li> <li>2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the authorized officer during the consultation process.</li> <li>3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.</li> <li>4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.</li> <li>5. Procedures necessary to facilitate access by subsistence users to conduct their activities.</li> </ol> <p>In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the authorized officer and NPR-A Subsistence Advisory Panel. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the [Northeast NPR-A] planning area shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.</p>		<p>c. A plan shall be developed that shows how the activity, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan will also describe the methods used to monitor the effects of the activity on subsistence use. The plan shall be submitted to the BLM as part of the plan of operations. The plan should address the following items:</p> <ol style="list-style-type: none"> <li>1. A detailed description of the activity(ies) to take place (including the use of aircraft).</li> <li>2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the authorized officer during the consultation process.</li> <li>3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.</li> <li>4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.</li> <li>5. Procedures necessary to facilitate access by subsistence users to conduct their activities.</li> <li>6. (<b>Alternative B-2 only</b>) Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts on the availability of marine mammals to subsistence hunters.</li> <li>7. (<b>Alternative B-2 only</b>) All vessels over 50 ft. in length engaged in operations requiring a BLM permit must have an Automatic Identification System (AIS) transponder system on the vessel.</li> </ol> <p>d. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the authorized officer and NPR-A Subsistence Advisory Panel.</p> <p>e. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the NPR-A shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.</p>		

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Same, except:  a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the North Slope Borough, and the NPR-A Subsistence Advisory Panel to discuss the siting, timing and methods of proposed operations. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities.  <b>Note:</b> The final unnumbered paragraph in the Northeast NPR-A Record of Decision is not included in the Northwest NPR-A Record of Decision, but the wording of the first sentence is included in numbered bullet 6 and the next two sentences are in numbered bullet 7. There is no comparable statement to the last sentence in the paragraph.</p>				
<p><b>H-2 Required Operating Procedure</b>  <b>Northeast</b>  <u>Objective:</u> Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.  <u>Requirement/Standard:</u> In addition to the consultation process described in Required Operating Procedure H-1 for permitted activities, before applying for permits to conduct geophysical (seismic) exploration, the applicant shall (1) consult with local communities and residents and (2) notify the local search and rescue organizations of current and recent seismic surveys. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.  a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will notify in writing all potentially affected long-term cabin and camp users.  b. The official recognized list of cabin and campsite users is the North Slope Borough's 2001 (or most current) inventory of cabins and campsites.</p>	<p><b>H-2 Best Management Practice</b>  <u>Objective:</u> Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.  <u>Requirement/Standard:</u> In addition to the consultation process described in Best Management Practice H-1 for permitted activities, before activity to conduct geophysical (seismic) exploration commences, applicants shall notify the local search and rescue organizations of proposed seismic survey locations for that operational season. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite used for subsistence purposes and located within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.    a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will notify all potentially affected subsistence-use cabin and campsite users.    b. The official recognized list of subsistence-use cabin and campsite users is the North Slope Borough's most current inventory of cabins and campsites, which have been identified by the subsistence users' names.</p>			

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>c. A copy of the notification letter and a list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.</p> <p>d. The authorized officer will prohibit seismic work within 1 mile of any known, long-term, cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the authorized officer. (Regardless of the consultation outcome, the authorized officer will prohibit wintertime seismic work within 300 feet of a known long-term cabin or campsite.)</p> <p>e. The permittee shall notify the appropriate local search and rescue (e.g., Nuiqsut Search and Rescue, Atkasuk Search and Rescue) of their current operational location within the NPR-A on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips and access routes accordingly. Identification of the appropriate search and rescue offices to be contacted can be obtained from the NPR-A Subsistence Advisory Panel.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Same, except:  In addition to the consultation process described above for permitted activities, before applying for permits to conduct geophysical (seismic) exploration, the applicant shall consult with local communities and residents:</p> <p>c. For the purpose of this standard, potentially affected cabins and campsites are defined as any camp or campsite within the boundary of the area subject to proposed geophysical exploration and/or within 1,200 feet of actual or planned travel routes used to supply the seismic operations while it is in operation.</p> <p>d. A copy of the notification letter and a list of potentially affected users shall also be provided to the office of the appropriate Native Tribal Government.</p> <p>e. Based on that consultation, the authorized officer may prohibit seismic work up to 1,200 feet of any known, long-term cabin or campsite. Generally, the authorized officer will allow</p>	<p>c. A copy of the notification letter, a map of the proposed exploration area, and the list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.</p> <p>d. The authorized officer will prohibit seismic work within 1 mile of any known subsistence-use cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the authorized officer. (Regardless of the consultation outcome, the authorized officer will prohibit seismic work within 300 feet of a known subsistence-use cabin or campsite.)</p> <p>e. The permittee shall notify the appropriate local search and rescue (e.g., Nuiqsut Search and Rescue, Atkasuk Search and Rescue) of their current operational location within the NPR-A on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips and access routes accordingly. Identification of the appropriate search and rescue offices to be contacted can be obtained from the coordinator of the NPR-A Subsistence Advisory Panel in the BLM's Arctic Field Office.</p>			

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
wintertime seismic work to be conducted within 300 feet of a long-term cabin or campsite that is not in use.				
No comparable provision.	<p><b><i>H-3 Best Management Practice</i></b>  <u>Objective:</u> Minimize impacts to sport hunting and trapping species and to subsistence harvest of those animals.  <u>Requirement/Standard:</u> Hunting and trapping by lessee's/permittee' s employees, agents, and contractors are prohibited when persons are on "work status." Work status is defined as the period during which an individual is under the control and supervision of an employer. Work status is terminated when the individual's shift ends and he/she returns to a public airport or community (e.g., Fairbanks, Barrow, Nuiqsut, or Deadhorse). Use of lessee/permittee facilities, equipment, or transport for personnel access or aid in hunting and trapping is prohibited.</p>			

## ORIENTATION PROGRAMS ASSOCIATED WITH PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>I-1 Required Operating Procedure</i></b>  <b>Northeast</b>  <u>Objective:</u> Minimize cultural and resource conflicts.  <u>Requirement/Standard:</u> All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, required operating procedures, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. The proposed orientation program shall be submitted to the authorized officer for review and approval and should:</p> <ol style="list-style-type: none"> <li>provide sufficient detail to notify personnel of applicable stipulations and required operating procedures as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.</li> <li>Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.</li> <li>Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.</li> </ol>	<p><b><i>I-1 Best Management Practice</i></b>  <u>Objective:</u> Minimize cultural and resource conflicts.  <u>Requirement/Standard:</u> All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, best management practices, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. The proposed orientation program shall be submitted to the authorized officer for review and approval and should:</p> <ol style="list-style-type: none"> <li>provide sufficient detail to notify personnel of applicable stipulations and best management practices as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.</li> <li>Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.</li> <li>Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.</li> </ol>			



## ORIENTATION PROGRAMS ASSOCIATED WITH PERMITTED ACTIVITIES

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.</p> <p>e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.</p> <p>f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.</p> <p>g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.</p> <p>h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.</p> <p>i. Include a module discussing bear interaction plans to minimize conflicts between bears and humans.</p> <p>j. Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to onsite personnel.</p> <p>k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the North Slope Borough Health Department for review and comment.</p> <p>l. Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the North Slope Borough Health Department for review and comment.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Same, except that subparagraphs j, k, and l are not included.</p>	<p>d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.</p> <p>e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.</p> <p>f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.</p> <p>g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.</p> <p>h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.</p> <p>i. Include a module discussing bear interaction plans to minimize conflicts between bears and humans.</p> <p>j. Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to on-site personnel.</p> <p>k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the North Slope Borough Health Department for review and comment.</p> <p>l. Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the North Slope Borough Health Department for review and comment.</p> <p><i>(Same text as in Northeast NPR-A 2008 Record of Decision)</i></p>			



## ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION PROCESS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>J.</b> <b>Northeast</b> The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or to have some other special status. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that will contribute to the need to list such a species or their habitat. The BLM may require modifications to or disapprove a proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. The BLM will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation.</p> <p><b>Northwest</b> Same, except characterized as Stipulation J-1.</p>	<p><b>J.</b> The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or to have some other special status. The BLM may require modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that will contribute to the need to list such a species or their habitat. The BLM may require modifications to or disapprove a proposed activity that is likely to adversely affect a proposed or listed endangered species, threatened species, or critical habitat. The BLM will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation.</p>			

## ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>K-1 Lease Stipulation - Rivers</b> <b>Northeast</b> <u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts to subsistence cabin and campsites; the disruption of subsistence activities; and impacts to scenic and other resource values. <u>Requirement/Standard:</u> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and adjacent to the rivers listed below at the distances identified. (Gravel mines may be located within the active</p>	<p><b>K-1 Lease Stipulation/Best Management Practice – Rivers</b> <b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternatives, K-1 would be a best management practice. In Alternatives B-1 and B-2, portions of the Colville, Ikpiuk, Kikiakrorak, Kogosukruk, and Titalik rivers have larger setbacks than in the other alternatives; see below for the details. <u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts to subsistence cabin and campsites; the disruption of subsistence activities; and impacts to scenic and other resource values. <u>Requirement/Standard:</u> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and adjacent to the rivers listed below at the distances identified. (Gravel mines may be located within the active floodplain consistent with Best Management Practice E-8). On a case-by case basis, and in consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility),</p>			

## ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>floodplain consistent with Required Operating Procedure E-8). With the exception of the Ikpikpuk River, these setbacks are measured from the bank of the river as determined by the hydrology at the time of application. The standard setback is 0.5 mile (from the bank's highest high watermark) and increased to 0.75 mile (from the bank's highest high watermark) where subsistence cabin and campsites are numerous. Along the Colville River and a portion of the Ikpikpuk a 1-mile (from the bank's highest high watermark) setback is required to protect important raptor habitat (for locations along rivers where setback distances change). On a case-by case basis, and in consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings to the main channel will be permitted through setback areas. The above setbacks may not be practical within river deltas. In these situations, permanent facilities shall be designed to withstand a 200-year flood event.</p> <p>a. <b>Colville River:</b> a 1-mile setback from the boundary of NPR-A along the Colville River as determined by cadastral survey to be the highest high watermark on the left (western or northern) bank extending the length of that portion of the river located within the [Northeast NPR-A] planning area. <b>Note:</b> The [Northeast NPR-A] planning area excludes conveyed Native lands along the lower reaches of the Colville River. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. <b>Note:</b> This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes. This preserves the opportunity to plan, design, and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within National Petroleum Reserve-Alaska.</p> <p>b. <b>Ikpikpuk River:</b> a 0.75-mile setback from each side of the centerline (1.5 miles total) of the Ikpikpuk River extending from the mouth south to section 19, T7N, R11W, U.M. (Umiat Meridian). From section 19, T7N, R11W, U.M., to section 4, T3N, R12W, U.M., a 1-mile setback is required. Beginning at section 4, T3N, R12W, U.M., a 0.5-mile setback from the centerline (1 mile total) will be required to the confluence of the Kigalik River and Maybe Creek. <b>Note:</b> The setback distances</p>	<p>essential pipeline and road crossings to the main channel will be permitted through setback areas. The above setbacks may not be practical within river deltas. In these situations, permanent facilities shall be designed to withstand a 200-year flood event. In the below list, if no upper limit for the setback is indicated, the setback extends to the head of the stream as identified in the National Hydrography Dataset.</p> <p>a. <b>Colville River:</b> a 1-mile setback (2-mile setback in Alternatives B-1 and B-2) from the boundary of NPR-A where the river determines the boundary along the Colville River as determined by cadastral survey to be the highest high watermark on the left (western or northern) bank and from both banks' ordinary high watermark where BLM-manages both sides of the river up through T5S, R30W, U.M. Above that point to its source at the juncture of Thunder and Storm creeks the setback will be 0.5 mile. <b>Note:</b> The planning area excludes conveyed Native lands along the lower reaches of the Colville River. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. <b>Note:</b> This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes, though the BLM would encourage minimal use of the setback area. This preserves the opportunity to plan, design, and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within National Petroleum Reserve-Alaska.</p> <p>b. <b>Ikpikpuk River:</b> a 0.5-mile setback from of the ordinary high watermark of the Ikpikpuk River extending from the mouth south to section 19, T7N, R11W, U.M. From section 19, T7N, R11W, U.M., to section 4, T3N, R12W, U.M., a 1-mile setback is required. Beginning at section. 4, T3N, R12W, U.M., a 0.5-mile setback from the centerline (1 mile total) will be required to the confluence of the Kigalik River and Maybe Creek. In Alternative B-1 and B-2, the setback would be 2 miles from the ordinary high watermark from the mouth of the river upstream through T7 N, R11W, U.M.; above that point the setback would be the same as described above in Alternative B-1 and 1 mile in Alternative B-2.</p> <p>c. <b>Miguakiak River:</b> a 0.5-mile setback from the bank's ordinary high watermark.</p> <p>d. <b>Kikiakrorak and Kogosukruk Rivers:</b> A 1-mile setback from the top of the bluff (or ordinary high watermark if there is no bluff) on the Kikiakrorak River downstream from T2N., R4W, U.M. and on the Kogosukruk River (including Branch of Kogosukruk River, Henry Creek, and two unnamed tributaries off the southern bank) downstream from T2N, R3W, U.M. In Alternatives B-1 and B-2, the setback would be 2 miles from the top of the bluff (or bank if there is no bluff) for the same waterbodies. The setback from these streams in Alternatives B-1 through D in the named townships and further upstream as applicable will be 0.5 mile from the top of the bluff or bank if there is no bluff.</p> <p>e. <b>Fish Creek:</b> a 3-mile setback from the bank's highest high watermark of the creek downstream from the eastern edge of section 31, T11N, R1E., U.M. and a 0.5-mile setback from the bank's highest high watermark farther upstream.</p> <p>f. <b>Judy Creek:</b> a 0.5-mile setback from the banks' ordinary high watermark.</p> <p>g. <b>Ublutuoch (Tigmiaqsiugvik) River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>h. <b>Alaktak River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>i. <b>Chipp River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>j. <b>Oumalik River:</b> a 0.5-mile setback from the Oumalik River ordinary high water mark from the mouth</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>only apply to the east bank where the Ikpikpuk River is the [Northeast NPR-A] planning area boundary.</p> <p>c. <b>Miguakiak River:</b> a 0.5-mile setback from the bank's highest high watermark.</p> <p>d. <b>Kikiakrorak and Kogosukruk Rivers:</b> <b>Note:</b> The following discussion refers only to portions of the Kikiakrorak River downstream from T2N, R4W, U.M., and the Kogosukruk River (including the four tributaries off the southern bank) downstream from T2N, R3W, U.M. No permanent oil and gas surface facilities, except essential transportation crossings, would be allowed within 1 mile of the top of the bluff (or bank if there is no bluff) on either side of the rivers and several of the Kogosukruk tributaries.</p> <p>e. <b>Fish Creek:</b> No permanent oil and gas surface facilities, except essential transportation crossings, would be allowed within 3 miles (from the bank's highest high watermark) of the creek downstream from the eastern edge of section 31, T11N, R1E, U.M. or within 0.5 mile (from the bank's highest high watermark) of the creek farther upstream.</p> <p>f. <b>Judy Creek:</b> a 0.5-mile setback from the banks' highest high watermark extending from the mouth to the confluence of an unnamed tributary in section 8, T8N, R2W, U.M.</p> <p>g. <b>Tingmiaksiqvik River:</b> No permanent oil and gas surface facilities, except essential transportation crossings, would be allowed within 0.5 mile (from the bank's highest high water mark) of this river from its headwaters within section 13, T7N, R1W, U.M. downstream to its confluence with Fish Creek.</p> <p><b>Northwest Objective:</b> Same.</p> <p><b>Requirement/Standard:</b> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the stream bed and adjacent to the rivers listed below at the distances identified. These setbacks are measured from the centerline of the river as determined by the current hydrology at the time of application. The standard setback is 0.5 mile and increased to 0.75 mile where subsistence cabins and campsites are numerous. Along the Colville River and a portion of the Ikpikpuk a 1-mile setback is required to protect important raptor habitat. (For locations along rivers where setback distances change, see Map 20 in the Final Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement). On a case-by case basis, and in consultation with</p>	<p>upstream to section 5, T8N, R14W, U.M., and a 0.5-mile setback in and above section 5, T8N, R14W, U.M.</p> <p>k. <b>Titaluk River:</b> a 0.5-mile setback from the centerline. In Alternatives B-1 and B-2, the setback would be 2 miles from the centerline from its confluence with the Ikpikpuk River upstream through T7N, R12W, U.M.; above that point the setback would be the same as described above.</p> <p>l. <b>Kigalik River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>m. <b>Maybe Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p><b>Topagoruk River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>o. <b>Ishuktak Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>p. <b>Meade River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark on BLM-managed lands.</p> <p><b>Usuktuk River:</b> a 0.5-mile setback (1 mile for Alternative B-2) from the ordinary high water mark on BLM-managed lands.</p> <p>r. <b>Pikroka Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>s. <b>Nigisaktuvik River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the Nigisakturik River ordinary high water mark upstream from the confluence with the Meade River to section 1, T11N, R25W, U.M. and a 0.5-mile setback further upstream.</p> <p>t. <b>Inaru River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>u. <b>Kucheak Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>v. <b>Avalik River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>w. <b>Niklavik Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>x. <b>Kugrua River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>y. <b>Kungok River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark on BLM-managed lands.</p> <p>z. <b>Kolipsun Creek:</b> a 0.5-mile setback from the ordinary high water mark upstream through T13N, R28W, U.M.</p> <p>aa. <b>Maguriak Creek:</b> a 0.5-mile setback from the ordinary high water mark upstream through T12N, R29W, U.M.</p> <p>ab. <b>Mikigealiak River:</b> a 0.5-mile setback from the ordinary high water mark upstream through T12N, R30W, U.M.</p> <p>ac. <b>Kuk River:</b> a 0.5-mile setback (1 mile for Alternative B-2) from the ordinary high water mark on BLM-managed lands.</p> <p>ad. <b>Ketik River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>ae. <b>Kaolak River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>af. <b>Ivisaruk River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark.</p> <p>ag. <b>Nokotlek River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>ah. <b>Ongorakvik River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>ai. <b>Tunalik River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>aj. <b>Avak River:</b> a 0.5-mile setback from the ordinary high water mark within the NPR-A.</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings perpendicular to the main channel will be permitted (unless noted otherwise) through setback areas. The above setbacks may not be practical within river deltas. In these situations, permanent facilities shall be designed to withstand a 200-year flood event.</p> <p>a. Colville River: a 1-mile setback from the northern bluff (or bank if there is no bluff) of the Colville River extending the length of that portion of the river within the [Northwest NPR-A] Planning Area. Road crossings intended to solely support oil and gas activities are prohibited. <b>Note:</b> This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes. This preserves the opportunity to plan, design, and construct public transportation systems to meet the economic, transportation, and public health and safety needs of the State of Alaska and/or communities within NPR-A.</p> <p>b. Ikpikpuk River: a 0.75-mile setback from the centerline of the Ikpikpuk River extending from the mouth south to section 19, T7N, R11W, U.M. From section 19, T7N, R11W, U.M. to section 4, T3N, R12W, U.M., a 1-mile setback is required. Beginning at section 4, T3N, R12W, U.M., a 0.5-mile setback will be required to the confluence of the Kigalik River and Maybe Creek.</p> <p>c. Alaktak River: a 0.75-mile setback from the centerline of the Alaktak River extending from the mouth to the Ikpikpuk River.</p> <p>d. Chipp River: a 0.75-mile setback from the centerline of the Chipp River extending from the mouth to the Ikpikpuk River.</p> <p>e. Oumalik River: a 0.75-mile setback from the centerline of the Oumalik River from the mouth upstream to section 5, T8N, R14W, U.M., and a 0.5-mile setback from section 5, T8N, R14W, U.M., upstream to section 2, T5N, R15W, U.M.</p> <p>f. Titaluk River: a 0.5-mile setback from the centerline of the Titaluk River from the confluence with the Ikpikpuk River upstream to section 1, T2N, R22W, U.M.</p> <p>g. Kigalik River: a 0.5-mile setback from the centerline of the Kigalik River from the confluence with the Ikpikpuk River upstream to the [Northwest NPR-A] Planning area boundary.</p> <p>h. Maybe Creek: a 0.5-mile setback from the centerline of the Maybe Creek from the confluence with the Ikpikpuk River upstream to section 8, T2S R6W, U.M.</p> <p>i. Topagoruk River: a 0.75-mile setback from the centerline of</p>		<p>ak. <b>Nigu River:</b> a 0.5-mile setback from the ordinary high water mark from the confluence with the Etivluk River upstream to the boundary of NPR-A</p> <p>al. <b>Etivluk River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>am. <b>Ipnarik River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>an. <b>Kuna River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>ao. <b>Kiligwa River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>ap. <b>Nuka River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>aq. <b>Driftwood Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>ar. <b>Utukok River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark within the NPR-A.</p> <p>as. <b>Awuna River:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>at. <b>Carbon Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p> <p>au. <b>Kokolik River:</b> a 0.5-mile (1 mile for Alternative B-2) setback from the ordinary high water mark within the NPR-A.</p> <p>av. <b>(Alternative B-2 only) Keolok Creek:</b> a 0.5-mile setback from the ordinary high water mark.</p>		

## ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>the Topagoruk River from the mouth upstream to the confluence with Ishuktak Creek. A 0.5-mile setback from each bank upstream from the confluence with the Ishuktak to section 3, T7N, R17W, U.M.</p> <p>j. Ishuktak Creek: a ½-mile setback from the centerline of Ishuktak Creek from the confluence with the Topagoruk River to Sec. 24, T8N, R16W, U.M.</p> <p>k. Meade River: a 0.75-mile setback from the centerline of the Meade River upstream to section 6, T6N, R21W, U.M. A 0.5-mile setback from each bank upstream from section 6, T6N, R21W, U.M. to the [Northwest NPR-A] Planning area boundary.</p> <p>l. Usuktuk River: a 0.75-mile setback from the centerline of the Usuktuk River upstream from the confluence with the Meade River to section 36, T10N, R19W, U.M.</p> <p>m. Pikroka Creek a 0.75-mile setback from the centerline of the Pikroka Creek upstream from the confluence with the Meade River to section 11, T8N, R23W, U.M.</p> <p>n. Nigisaktuvik River: a 0.75-mile setback from the centerline of the Nigisaktuvik River upstream from the confluence with the Meade River to section 1, T11N, R25W, U.M.</p> <p>o. Inaru River: a 0.75-mile setback from the centerline. [Note: the Northwest NPR-A plan incorrectly indicated that the Inaru River extended upstream to section 17, T15N, R25W, U.M.]</p> <p>p. Kucheak Creek: a 0.75-mile setback from the centerline of Kucheak Creek from the confluence with the Inaru River upstream to section 20, T13N, R24W, U.M.</p> <p>q. Avalik River: a 0.5-mile setback from the centerline of the Avalik River along that portion of the river within the [Northwest NPR-A] Planning area.</p> <p>r. Niklavik Creek: a 0.5-mile setback from the centerline of the Niklavik Creek from the confluence with the Inaru River upstream to section 5, T17N, R21W, U.M.</p> <p><b>Colville River Special Area Management Plan-Protection 1 Objective:</b> Minimize the loss of arctic peregrine falcon nesting habitat in the Colville River Special Area.</p> <p><b>Requirement/Standard:</b> To minimize the direct loss of arctic peregrine falcon nesting habitat and to protect nest sites in the Colville River Special Area the following protective measures apply: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the stream bed and adjacent to the rivers listed below at the distances identified. On a</p>	<p>(Colville River Special Area Management Plan Protection 1 would not be changed as part of this plan, except that under Alternatives B-1 and B-2, the setbacks for the Colville, Kikiarorak, and Kogosukruk rivers is widened to 2 miles.)</p>			



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>case-by-case basis, and in consultation with federal, State, and North Slope Borough regulatory and resource agencies (as appropriate; based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings perpendicular to the main channel will be permitted through setback areas.</p> <p>a. Colville River: downstream of the Etivluk River a continuous 1-mile setback measured from the highest high watermark on the left bank (facing downstream); upstream of the Etivluk River a 1-mile setback measured from the ordinary high watermark of the bank on both sides of the river. Development of road crossings intended to support oil and gas activities shall be consolidated with other similar projects and uses to the maximum extent possible. This provision does not apply to intercommunity or other permanent roads constructed with public funds for general transportation purposes.</p> <p>b. Kikiarorak River: downstream from T2N, R4W, U.M., a continuous 1-mile setback as measured from the top of the bluff (or bank if there is no bluff) of both sides of the river.</p> <p>c. Kogosukruk River: downstream from T2N, R3W, U.M., a continuous 1-mile setback as measured from the top of the bluff (or bank if there is no bluff) of both sides of the river and several of its tributaries.</p>				
<p><b>K-2 Lease Stipulation--Deep Water Lakes Northeast</b></p> <p><u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of deep water lakes; the loss of spawning, rearing, or over wintering habitat for fish; the loss of cultural and paleontological resources; impacts to subsistence cabin and campsites; and the disruption of subsistence activities.</p> <p><u>Requirement/Standard:</u> Generally, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited on the lake or lakebed and within 0.25 mile of the ordinary high watermark of any deep lake as determined to be in lake zone III (i.e., depth greater than 13 feet [4 meters]; Mellor 1985). On a case-by-case basis in consultation with federal, State and North Slope Borough regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline(s), road crossings, and other permanent facilities may be considered through the permitting</p>	<p><b>K-2 Lease Stipulation/Best Management Practice – Deep Water Lakes</b></p> <p><b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternatives, K-2 would be a best management practice.</p> <p><u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of deep water lakes; the loss of spawning, rearing or over wintering habitat for fish; the loss of cultural and paleontological resources; impacts to subsistence cabin and campsites; and the disruption of subsistence activities.</p> <p><u>Requirement/Standard:</u> Generally, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited on the lake or lakebed and within 0.25 mile of the ordinary high watermark of any deep lake as determined to be in lake zone III (i.e., depth greater than 13 feet [4 meters]; Mellor 1985). On a case-by-case basis in consultation with federal, State and North Slope Borough regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline(s), road crossings, and other permanent facilities may be considered through the permitting process in these areas where the lessee can demonstrate on a site-specific basis that impacts will be minimal.</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>process in these areas where the lessee can demonstrate on a site-specific basis that impacts will be minimal and if it is determined that there is no feasible or prudent alternative.</p> <p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited on the lake or lakebed and within 0.25 mile of the ordinary high watermark of any deep lake as determined to be in lake zone III, i.e., depth &gt;4 meters (Mellor 1985). On a case-by-case basis, and in consultation with federal, State and North Slope Borough regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline, road crossings, and other permanent facilities may be permitted through or in these areas where the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative.</p>				
<p><b>K-3a<sup>4</sup> Stipulation - Teshekpuk Lake Shoreline Northeast</b>  <b>(Note:</b> Teshekpuk Lake and islands within the lake (approximately 219,000 acres) will not be available for oil and gas leasing.)  <u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of this large and regionally significant deep water lake; the loss of cultural and paleontological resources; impacts to subsistence cabins, campsites and associated activities; and to protect fish and wildlife habitat including important insect-relief areas.  <u>Requirement/Standard:</u> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited within 0.25 mile of the ordinary high watermark of Teshekpuk Lake. In addition, no permanent oil and gas facilities, except pipelines, would be allowed in portions of T14–15N, R9W, and T15N, R8W, U.M. greater than 0.25 mile of the ordinary high watermark of Teshekpuk Lake as depicted on Map 2-1. (No alternative procedures will be approved.)</p>	<p><b>K-3a Stipulation – Teshekpuk Lake Shoreline</b>  <b>NOTE: this applies only to Alternative C.</b> Alternatives B-1 and B-2 have no comparable provision because no non-subsistence permanent infrastructure would be allowed within the Teshekpuk Lake shoreline area. Alternative D also has no comparable provision, but note that Teshekpuk Lake is a deep water lake to which Stipulation K-2 applies.  <u>Objective:</u> Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of this large and regionally significant deep water lake; the loss of cultural and paleontological resources; impacts to subsistence cabins, campsites and associated activities; and to protect fish and wildlife habitat including important insect-relief areas.  <u>Requirement/Standard:</u> Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited within 0.25 mile of the ordinary high watermark of Teshekpuk Lake. In addition, no permanent oil and gas facilities, except pipelines, will be allowed in portions of T14–15 N, R9W, and T15N, R8W, U.M. greater than 0.25 mile of the ordinary high watermark of Teshekpuk Lake as depicted on Map 2-3K. (No waiver, exception, or modification will be approved.)</p>			

<sup>4</sup> K-3a, K-4a, K-5a, and K-8a all refer to Stipulations K-3, K-4, K-5, and K-8 in the Northeast NPR-A IAP ROD. K-3b, K-4b, K-5b, and K-8b refer to K-3, K-4, K-5, and K-8 in the Northwest NPR-A IAP/ROD.



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>K-3b Lease Stipulation–Dease Inlet, Admiralty Bay, Elson Lagoon, and Associated Barrier Islands Northwest</i></b></p> <p>Lease stipulations for Dease Inlet, Admiralty Bay, Elson Lagoon, and the Barrier Islands, contain specific criteria that have been incorporated into stipulation language. Because of sensitive biological resources and/or subsistence concerns of Dease Inlet, Admiralty Bay, Elson Lagoon, and inland of the Barrier Islands, the standard(s) for exploration and development activities are set high with the burden of proof resting with the lessee to demonstrate to the authorized officer that granting an approval is warranted.</p> <p><u>Objective:</u> Protect fish and wildlife habitat, preserve air and water quality, and minimize impacts to traditional subsistence activities and historic travel routes on Dease Inlet, Admiralty Bay, and Elson Lagoon.</p> <p><u>Requirement/Standard (Exploration):</u> Oil and gas exploration operations (e.g., drilling, seismic exploration, and testing) are not allowed on Dease Inlet, Admiralty Bay, and Elson Lagoon (including natural and barrier islands), between May 15 and October 15 of each season. Requests for approval of any activities must be submitted in advance and must be accompanied by evidence and documentation that demonstrates to the satisfaction of the authorized office that the actions or activities meet all of the following criteria:</p> <ul style="list-style-type: none"> <li>a. Exploration activities will not unreasonably conflict with traditional subsistence uses or significantly impact seasonally concentrated fish and wildlife resources.</li> <li>b. There is adequate spill response capability to effectively respond during periods of broken ice and/or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include improvements in blowout prevention technology, equipment and/or changes in operational procedures and "top-setting" of hydrocarbon-bearing zones.</li> <li>c. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic will be conducted to minimize additional impacts or further compounding of "direct spill" related impacts on area resources and subsistence uses.</li> <li>d. The location of exploration and related activities shall be sited</li> </ul>	<p><b><i>K-3b Lease Stipulation/Best Management Practice – Kogru River, Dease Inlet, Admiralty Bay, Elson Lagoon, Peard Bay, Wainwright Inlet/Kuk River, and Kasegaluk Lagoon, and their associated Islands</i></b></p> <p><b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-3b would be a best management practice. Alternatives B-1 and C, and, to a lesser extent, Alternative B-2, would generally prohibit non-subsistence permanent infrastructure in these waters.</p> <p><u>Objective:</u> Protect fish and wildlife habitat (including, but not limited to, that for waterfowl and shorebirds, caribou insect-relief, and marine mammals), preserve air and water quality, and minimize impacts to subsistence activities and historic travel routes on the major coastal waterbodies.</p> <p><u>Requirement/Standard (Exploration):</u> Oil and gas exploration operations (e.g., drilling, seismic exploration, and testing) are not allowed on the major coastal waterbodies and coastal islands between May 15 and October 15 of each season. Requests for approval of any activities must be submitted in advance and must be accompanied by evidence and documentation that demonstrates to the satisfaction of the authorized office that the actions or activities meet all of the following criteria:</p> <ul style="list-style-type: none"> <li>a. Exploration activities will not unreasonably conflict with subsistence uses or significantly impact seasonally concentrated fish and wildlife resources.</li> <li>b. There is adequate spill response capability to effectively respond during periods of broken ice and/or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include improvements in blowout prevention technology, equipment and/or changes in operational procedures and "top-setting" of hydrocarbon-bearing zones.</li> <li>c. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic will be conducted to minimize additional impacts or further compounding of "direct spill" related impacts on area resources and subsistence uses.</li> <li>d. The location of exploration and related activities shall be sited so as to not</li> </ul>			<p>No comparable provision.</p>

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>so as to not pose a hazard to navigation by the public using high-use traditional subsistence-related travel routes into and through Dease Inlet, Admiralty Bay and Elson Lagoon, as identified by the North Slope Borough, recognizing that marine and nearshore travel routes change over time, subject to shifting environmental conditions.</p> <p>e. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.</p> <p><u>Requirement/Standard (Development):</u> With the exception of linear features such as pipelines, no permanent oil and gas facilities are permitted on or under the water within 0.75 mile seaward of the shoreline (as measured from mean high tide) of Dease Inlet, Admiralty Bay, and Elson Lagoon or the natural islands (excluding Barrier Islands). Elsewhere, permanent facilities within Dease Inlet, Admiralty Bay, and Elson Lagoon will only be permitted on or under the water if they can meet all the following criteria:</p> <p>f. Design and construction of facilities shall minimize impacts to traditional subsistence uses, travel corridors, seasonally concentrated fish and wildlife resources.</p> <p>g. Daily operational activities, including use of support vehicles, watercraft, and aircraft traffic, alone or in combination with other past, present, and reasonably foreseeable activities, shall be conducted to minimize impacts to traditional subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources.</p> <p>h. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, bridges or causeways, shall be sited and constructed so as to not pose a hazard to navigation by the public using traditional high-use subsistence-related travel routes into and through Dease Inlet, Admiralty Bay and Elson Lagoon as identified by the North Slope Borough.</p> <p>i. Demonstrated year-round oil spill response capability, including the capability of adequate response during periods of broken ice or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include seasonal drilling restrictions, improvements in blowout prevention technology, equipment</p>	<p>pose a hazard to navigation by the public using high-use subsistence-related travel routes into and through the major coastal waterbodies, as identified by the North Slope Borough, recognizing that marine and nearshore travel routes change over time, subject to shifting environmental conditions.</p> <p>e. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.</p> <p><u>Requirement/Standard (Development):</u> With the exception of linear features such as pipelines, no permanent oil and gas facilities are permitted on or under the water within 0.75 mile seaward of the shoreline (as measured from mean high tide) of the major coastal waterbodies or the natural coastal islands (to the extent that the seaward subsurface is within NPR-A). Elsewhere, permanent facilities within the major coastal waterbodies will only be permitted on or under the water if they can meet all the following criteria:</p> <p>f. Design and construction of facilities shall minimize impacts to subsistence uses, travel corridors, seasonally concentrated fish and wildlife resources.</p> <p>g. Daily operational activities, including use of support vehicles, watercraft, and aircraft traffic, alone or in combination with other past, present, and reasonably foreseeable activities, shall be conducted to minimize impacts to subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources.</p> <p>h. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, bridges or causeways, shall be sited and constructed so as to not pose a hazard to navigation by the public using traditional high-use subsistence-related travel routes into and through the major coastal waterbodies as identified by the North Slope Borough.</p> <p>i. Demonstrated year-round oil spill response capability, including the capability of adequate response during periods of broken ice or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include seasonal drilling restrictions, improvements in blowout prevention technology, equipment and/or changes in operational procedures, and “top-setting” of hydrocarbon-bearing zones.</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>and/or changes in operational procedures, and “top-setting” of hydrocarbon-bearing zones.</p> <p>j. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic that add to impacts or further compound “direct spill” related impacts on area resources and subsistence uses.</p> <p>k. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.</p>	<p>j. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic that add to impacts or further compound “direct spill” related impacts on area resources and subsistence uses.</p> <p>k. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.</p>			
<p><b><i>K-4a Lease Stipulation - Goose Molting Area Northeast</i></b></p> <p><u>Objective:</u> Minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.</p> <p><u>Requirement/Standard (General):</u> Within the Goose Molting Area no permanent oil and gas facilities, except for pipelines will be allowed on the approximately 240,000 acres of lake buffers illustrated in lavender on Map 2-1. No alternative procedures will be considered. Prior to the permitting of a pipeline in the Goose Molting Area, a workshop will be convened to determine the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. In addition, only “in field” roads will be authorized as part of oil and gas field development.</p> <p><u>Requirement/Standard (Exploration):</u> In goose molting habitat area exploratory drilling shall be limited to temporary facilities such as ice pads, ice roads, and ice airstrips, unless the lessee demonstrates that construction of permanent facilities (outside the identified Goose Molting Restricted Surface Occupancy Areas) such as gravel airstrips, storage pads, and connecting roads is environmentally preferable (Also see <i>Stipulation K-11</i> regarding allowable surface disturbance). In addition, the following standards will be followed for permitted activities:</p> <p>a. From June 15 through August 20 exploratory drilling and associated activities are prohibited. The intent of this rule is to restrict exploration drilling during the period when geese are present.</p> <p>b. Water extraction from any lake used by molting geese shall not</p>	<p><b><i>K-4a Lease Stipulation/Best Management Practice – Goose Molting Area</i></b></p> <p><u>Note:</u> This measure would be applied to relevant new leases. On lands unavailable for leasing, K-4a would be a best management practice.</p> <p><u>Objective:</u> Minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.</p> <p><u>Requirement/Standard (General):</u> Within the Goose Molting Area no permanent oil and gas facilities, except for pipelines, will be allowed within 1 mile of the shoreline of goose molting lakes. (See Map 2-3K for the current location of these 1-mile setback areas.) No waiver, exception, or modification will be considered. Prior to the permitting of a pipeline in the Goose Molting Area, a workshop will be convened to determine the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to Federal, state, and North Slope Borough representatives. In addition, only “in field” roads will be authorized as part of oil and gas field development.</p> <p><u>Requirement/Standard (Exploration):</u> In goose molting habitat area exploratory drilling shall be limited to temporary facilities such as ice pads, ice roads, and ice airstrips, unless the lessee demonstrates that construction of permanent facilities (outside the identified Goose Molting Restricted Surface Occupancy Areas) such as gravel airstrips, storage pads, and connecting roads is environmentally preferable. (Also see <i>Stipulation K-11</i> regarding allowable surface disturbance). In addition, the following standards will be followed for permitted activities:</p> <p>a. From June 15 through August 20 exploratory drilling and associated activities are prohibited. The intent of this rule is to restrict exploration drilling during the period when geese are present.</p> <p>b. Water extraction from any lake used by molting geese shall not alter</p>			<p><b><i>K-4a Lease Stipulation – Goose Molting Area</i></b></p> <p><u>Objective:</u> Minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.</p> <p><u>Requirement/Standard:</u> Roads will be designed to minimize impacts to molting geese. In general, roads shall be designed to avoid areas within 0.25 mile of molting geese lakes.</p>

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins. Considerations will be given to seasonal use by operators (generally in winter) and geese (generally in summer), as well as recharge to lakes from the spring snowmelt.</p> <p>c. Oil and gas exploration activities will avoid alteration (e.g., damage or disturbance of soils, vegetation, or surface hydrology) of critical goose-feeding habitat types along lakeshore margins (grass/sedge/moss), as identified by the authorized officer in consultation with the USFWS.</p> <p><u>Requirement/Standard (Development)</u>: In Goose Molting Area, the following standards will be followed for permitted activities:</p> <p>a. Within the Goose Molting Area from June 15 through August 20, all off-pad activities and major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended (see also Lease Stipulation K-5-d), unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb molting geese during the period when geese are present.</p> <p>b. Water extraction from any lakes used by molting geese shall not alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins. Considerations will be given to seasonal use by operators (generally in winter) and geese (generally in summer), as well as recharge to lakes from the spring snowmelt.</p> <p>c. Oil and gas activities will avoid altering (i.e., damage or disturbance of soils, vegetation, or surface hydrology) critical goose-feeding habitat types along lakeshore margins (grass/sedge/moss) and salt marsh habitats.</p> <p>d. Permanent oil and gas facilities (including gravel roads, pads, and airstrips, but excluding pipelines) and material sites will be sited outside the identified buffers and restricted surface occupancy areas. Additional limits on development footprint apply; (also see Lease Stipulation K-11.)</p> <p>e. Between June 15 and August, 20 within the Goose Molting Area, oil and gas facilities shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any Goose Molting Area lake, as identified by the authorized officer in consultation with appropriate federal, State, and North Slope Borough regulatory</p>	<p>hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins. Considerations will be given to seasonal use by operators (generally in winter) and geese (generally in summer), as well as recharge to lakes from the spring snowmelt.</p> <p>c. Oil and gas exploration activities will avoid alteration (e.g., damage or disturbance of soils, vegetation, or surface hydrology) of critical goose-feeding habitat types along lakeshore margins (grass/sedge/moss), as identified by the authorized officer in consultation with the USFWS.</p> <p><u>Requirement/Standard (Development)</u>: In the Goose Molting Area, the following standards will be followed for permitted activities:</p> <p>a. Within the Goose Molting Area from June 15 through August 20, all off-pad activities and major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended (see also Lease Stipulation K-5-d), unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb molting geese during the period when geese are present.</p> <p>b. Water extraction from any lakes used by molting geese shall not alter hydrological conditions that could adversely affect identified goose-feeding habitat along lakeshore margins. Considerations will be given to seasonal use by operators (generally in winter) and geese (generally in summer), as well as recharge to lakes from the spring snowmelt.</p> <p>c. Oil and gas activities will avoid altering (i.e., damage or disturbance of soils, vegetation, or surface hydrology) critical goose-feeding habitat types along lakeshore margins (grass/sedge/moss) and salt marsh habitats.</p> <p>d. Permanent oil and gas facilities (including gravel roads, pads, and airstrips, but excluding pipelines) and material sites will be sited outside the identified buffers and restricted surface occupancy areas. Additional limits on development footprint apply; (also see Lease Stipulation K-11.)</p> <p>e. Between June 15 and August, 20 within the Goose Molting Area, oil and gas facilities shall incorporate features (e.g., temporary fences, siting/orientation) that screen/shield human activity from view of any Goose Molting Area lake, as identified by the authorized officer in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies.</p>			



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>and resource agencies.</p> <p>f. Strategies to minimize ground traffic shall be implemented from June 15 through August 20. These strategies may include limiting trips, use of convoys, different vehicle types, etc. to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</p> <p>g. Within the Goose Molting Area aircraft use (including fixed wing and helicopter) shall be restricted from June 15 through August 20 unless doing so endangers human life or violates safe flying practices. Restrictions may include: (1) limiting flights to two round-trips/week, and (2) limiting flights to corridors established by the BLM after discussions with appropriate federal, State, and North Slope Borough regulatory and resource agencies. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. <b>Note:</b> This site-specific lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and required operating procedures. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p> <p>h. Any permit for development issued under this IAP/EIS will include a requirement for the lessee to conduct monitoring studies necessary to adequately determine consequences of development and any need for change to mitigations. Monitoring studies will be site- and development-specific within a set of over-arching guidelines developed by the BLM after conferring with appropriate federal, State, North Slope Borough agencies. The study(s) will include the construction period and will continue for a minimum of 3 years after construction has been completed and production has begun. The monitoring studies will be a continuation of evaluating the effectiveness of the K-4 Lease Stipulation requirements in meeting the objective of K-4 and determine if any changes to the lease stipulation or any project specific mitigation(s) are</p>		<p>f. Strategies to minimize ground traffic shall be implemented from June 15 through August 20. These strategies may include limiting trips, use of convoys, different vehicle types, etc. to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</p> <p>g. Within the Goose Molting Area aircraft use (including fixed wing and helicopter) shall be restricted from June 15 through August 20 unless doing so endangers human life or violates safe flying practices. Restrictions may include: (1) limiting flights to two round-trips/week, and (2) limiting flights to corridors established by the BLM after discussions with appropriate federal, State, and North Slope Borough regulatory and resource agencies. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. <b>Note:</b> This site-specific lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p> <p>h. Any permit for development issued under this IAP/EIS will include a requirement for the lessee to conduct monitoring studies necessary to adequately determine consequences of development and any need for change to mitigations. Monitoring studies will be site- and development-specific within a set of over-arching guidelines developed by the BLM after conferring with appropriate federal, State, North Slope Borough agencies. The study(ies) will include the construction period and will continue for a minimum of 3 years after construction has been completed and production has begun. The monitoring studies will be a continuation of evaluating the effectiveness of Stipulation K-4a's requirements in meeting the objective of K-4 and determine if any changes to the lease stipulation or any project specific mitigation(s) are necessary. If changes are determined to be necessary, the BLM, with the lessee and/or their representative, will conduct an assessment of the feasibility of altering development operation (e.g., reduced human activity, visibility barriers,</p>		

## ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
necessary. If changes are determined to be necessary, the BLM, with the lessee and/or their representative, will conduct an assessment of the feasibility of altering development operation (e.g., reduced human activity, visibility barriers, noise abatement). Any changes determined necessary will be implemented prior to authorization of any new construction.	noise abatement). Any changes determined necessary will be implemented prior to authorization of any new construction.			
<b><i>K-4b Required Operating Procedure – Brant Survey Area Northwest</i></b> <u>Objective:</u> Minimize the loss or alteration of habitat for, or disturbance of, nesting and brood rearing brant in the Brant Survey Area. <u>Requirement/Standard:</u> a. Aerial surveys for brant nesting colonies and brood-rearing areas shall be conducted for a minimum of 2 years before authorization of construction of permanent facilities. At a minimum, the survey area shall include the proposed development site(s) (i.e., the footprint) and the surrounding 0.5-mile area. These surveys shall be conducted following accepted BLM protocol. b. Development may be prohibited or activities curtailed within 0.5 mile of all identified brant nesting colonies and brood-rearing areas identified during the 2-year survey.	<b><i>K-4b Best Management Practice – Brant Survey Area</i></b> <u>Objective:</u> Minimize the loss or alteration of habitat for, or disturbance of, nesting and brood rearing brant in the Brant Survey Area. <u>Requirement/Standard:</u> a. Aerial surveys for brant nesting colonies and brood-rearing areas shall be conducted for a minimum of 2 years before authorization of construction of permanent facilities. At a minimum, the survey area shall include the proposed development site(s) (i.e., the footprint) and the surrounding 0.5-mile area. These surveys shall be conducted following accepted BLM protocol.  b. Development may be prohibited or activities curtailed within 0.5 mile of all identified brant nesting colonies and brood-rearing areas identified during the 2-year survey.  (Same text as in Northwest NPR-A 2004 Record of Decision)			
<b><i>K-5a Lease Stipulation - Teshekpuk Lake Caribou Habitat Area Northeast</i></b> <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions the Teshekpuk Lake Caribou Habitat Area that are essential for all season use, including calving and rearing, insect-relief, and migration. <u>Requirement/Standard:</u> In the Teshekpuk Lake Caribou Habitat Area the following standards will be applied to permitted activities: a. Before authorization of construction of permanent facilities (limited as they may be by restricted surface occupancy areas established in other lease stipulations), the lessee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the Teshekpuk Caribou Herd has been completed within the last 10 years. The study shall include a minimum of 4 years of current data on the Teshekpuk Caribou Herd movements and the study design shall be approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough wildlife	<b><i>K-5a Lease Stipulation/Best Management Practice –Teshekpuk Lake Caribou Habitat Area</i></b> <u>Note:</u> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-5a would be a best management practice. Under Alternatives B-1, B-2 and C the Teshekpuk Lake Caribou Habitat Area encompasses those lands designated as such in the Northeast NPR-A Supplemental IAP Record of Decision and the Caribou Study Area in the Northwest NPR-A IAP Record of Decision as well as additional lands south of the area as defined in Alternative A. <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions the Teshekpuk Lake Caribou Habitat Area that are essential for all season use, including calving and rearing, insect-relief, and migration. <u>Requirement/Standard:</u> In the Teshekpuk Lake Caribou Habitat Area the following standards will be applied to permitted activities: a. Before authorization of construction of permanent facilities (limited as they may be by restricted surface occupancy areas established in other lease stipulations), the lessee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the Teshekpuk			<b><i>K-5a Lease Stipulation– Teshekpuk Lake Caribou Habitat Area</i></b> <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions the Teshekpuk Lake Caribou Habitat Area (see Map 2-4K) that are essential for all season use, including calving and rearing, insect-relief, and migration.  Requirement/

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>and resource agencies. The study should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Teshekpuk Lake Caribou Habitat Area. Study data may be gathered concurrently with other activities as approved by the authorized officer and in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. A final report of the study results will be prepared and submitted. Prior to the permitting of a pipeline in the Teshekpuk Lake Caribou Habitat Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife (specifically the Teshekpuk Caribou Herd) and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. All of these modifications will increase protection for caribou and other wildlife that utilize the Teshekpuk Lake Caribou Habitat Area during all seasons.</p> <p>b. Within the Teshekpuk Lake Caribou Habitat Area, lessees shall orient linear corridors when laying out oil field developments to the extent practicable, to address migration and corralling effects and to avoid loops of road and/or pipeline that connect facilities.</p> <p>c. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required by the authorized officer, after consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, in the Teshekpuk Lake Caribou Habitat Area where pipelines potentially impede caribou movement.</p> <p>d. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended within Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb caribou during calving and insect-relief periods. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. The lessee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou</p>	<p>Caribou Herd has been completed within the last 10 years. The study shall include a minimum of four years of current data on the Teshekpuk Caribou Herd movements and the study design shall be approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. The study should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Teshekpuk Lake Caribou Habitat Area. Study data may be gathered concurrently with other activities as approved by the authorized officer and in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. A final report of the study results will be prepared and submitted. Prior to the permitting of a pipeline in the Teshekpuk Lake Caribou Habitat Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife (specifically the Teshekpuk Caribou Herd) and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. All of these modifications will increase protection for caribou and other wildlife that utilize the Teshekpuk Lake Caribou Habitat Area during all seasons.</p> <p>b. Within the Teshekpuk Lake Caribou Habitat Area, lessees shall orient linear corridors when laying out oil and gas field developments to address migration and corralling effects and to avoid loops of road and/or pipeline that connect facilities.</p> <p>c. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required by the authorized officer, after consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, in the Teshekpuk Lake Caribou Habitat Area where pipelines potentially impede caribou movement.</p> <p>d. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended within Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb caribou during calving and insect-relief periods. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. The lessee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.</p>			<p><u>Standard:</u> Same as Alternatives B-1 through C.</p>



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.</p> <p>e. The following ground and air traffic restrictions shall apply to permanent oil and gas-related roads in the areas and time periods indicated:</p> <ol style="list-style-type: none"> <li>1. Within the Teshekpuk Lake Caribou Habitat Area, from May 20 through August 20, traffic speed shall not exceed 15 miles per hour when caribou are within 0.5 mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</li> <li>2. The lessee or a contractor shall observe caribou movement from May 20 through August 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped temporarily to allow a crossing by 10 or more caribou. Sections of road will be evacuated whenever an attempted crossing by a large number of caribou appears to be imminent. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</li> <li>3. Major equipment, materials, and supplies to be used at oil and gas work sites in the Teshekpuk Lake Caribou Habitat Area shall be stockpiled prior to or after the period of May 20 through August 20 to minimize road traffic during that period.</li> <li>4. Within the Teshekpuk Lake Caribou Habitat Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through August 20 unless doing so endangers human life or violates safe flying practices. Restrictions may include prohibiting the use of aircraft larger than a Twin Otter by authorized users of the [Northeast NPR-A] planning area, including oil and gas lessees, from May 20 through August 20 within the Teshekpuk Lake Caribou Habitat Area, except for emergency purposes. The lessee shall submit with</li> </ol>	<p>e. The following ground and air traffic restrictions shall apply in the areas and time periods indicated. Ground traffic restrictions apply to permanent oil and gas-related roads:</p> <ol style="list-style-type: none"> <li>1. Within the Teshekpuk Lake Caribou Habitat Area, from May 20 through August 20, traffic speed shall not exceed 15 miles per hour when caribou are within 0.5 mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</li> <li>2. The lessee or a contractor shall observe caribou movement from May 20 through August 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped:               <ol style="list-style-type: none"> <li>a. temporarily to allow a crossing by 10 or more caribou. Sections of road will be evacuated whenever an attempted crossing by a large number of caribou appears to be imminent. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation.</li> <li>b. by direction of the authorized officer throughout a defined area for up to four weeks to prevent displacement of calving caribou.</li> </ol>               The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.             </li> <li>3. Major equipment, materials, and supplies to be used at oil and gas work sites in the Teshekpuk Lake Caribou Habitat Area shall be stockpiled prior to or after the period of May 20 through August 20 to minimize road traffic during that period.</li> <li>4. Within the Teshekpuk Lake Caribou Habitat Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through August 20 unless doing so endangers human life or violates safe flying practices. Authorized users of the NPR-A may be restricted from using aircraft larger than a Twin Otter, and limited to an average of one fixed-wing aircraft takeoff and landing per day per airstrip, except for emergency purposes. Restrictions may include prohibiting the use of aircraft larger than a Twin Otter by authorized users of the NPR-A, including oil and gas lessees, from</li> </ol>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and required operating procedures. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p> <p>5. Within the Teshekpuk Lake Caribou Habitat Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through June 20 unless doing so endangers human life or violates safe flying practices. Restrictions may include limiting fixed-wing aircraft takeoffs and landings by authorized users of the [Northeast NPR-A] planning area to an average of one round-trip flight per day from May 20 through June 20, at aircraft facilities within the Teshekpuk Lake Caribou Habitat Areas. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</p> <p>6. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, and 2,000 feet above ground level over the Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless doing so endangers human life or violates safe flying practices. Caribou wintering ranges will be defined annually by the authorized officer in consultation with the Alaska Department of Fish and Game. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and required operating procedures. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p>		<p>May 20 through August 20 within the Teshekpuk Lake Caribou Habitat Area, except for emergency purposes. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p> <p>5. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, and 2,000 feet above ground level over the Teshekpuk Lake Caribou Habitat Area from May 20 through August 20, unless doing so endangers human life or violates safe flying practices. Caribou wintering ranges will be defined annually by the authorized officer in consultation with the Alaska Department of Fish and Game. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p>		

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>K-5b Required Operating Procedure – Caribou Study Area Northwest</i></b>  <u>Objective:</u> None stated.  <u>Requirement/Standard:</u> Before authorization of construction of permanent facilities, the lessee shall design and implement a study of caribou movement, especially during the insect season. The study would include a minimum of 3 years of current data on caribou movements. The study design shall be approved by the authorized officer and should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Caribou Study Area. Study data may be gathered concurrently with other activities.</p>	<p><b><i>K-5b Best Management Practice – Caribou Study Area</i></b>  <b>NOTE: This applies only to Alternative D.</b> Alternatives B1-, B-2, and C are incorporated into K-5a Stipulation, above.  <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements in the Caribou Study Area.  <u>Requirement/ Standard:</u> Before authorization of construction of permanent facilities, the lessee shall design and implement a study of caribou movement, especially during the insect season. The study would include a minimum of 3 years of current data on caribou movements. The study design shall be approved by the authorized officer and should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Caribou Study Area. Study data may be gathered concurrently with other activities.</p>			
<p><b><i>K-6 Stipulation - Coastal Area Northeast</i></b>  <u>Objective:</u> Minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; to prevent contamination of marine waters; loss of important bird habitat; alteration or disturbance of shoreline marshes; and impacts to subsistence resources activities.  <u>Requirement/Standard:</u> In the Coastal Area, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines established to support exploration and development activities shall be located at least 0.75 mile inland from the coastline to the extent practicable. Where, as a result of technological limitations, economics, logistics, or other factors, a facility must be located within 0.75 mile inland of the coastline, the practicality of locating the facility at previously occupied sites such as Camp Lonely, various Husky/USGS drill sites, and Distant Early Warning-Line sites, shall be considered. Use of existing sites within 0.75 mile of the coastline shall also be acceptable where it is demonstrated that use of such sites will reduce impacts to shorelines or otherwise be environmentally preferable. All lessees/permittees involved in activities in the immediate area must coordinate use of these new or existing sites with all other prospective users. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the Nuiqsut Whaling Captains' Association, and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.</p>	<p><b><i>K-6 Lease Stipulation – Coastal Area (Alternatives B-1, C, and D)</i></b>  <b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-6 would be a best management practice.  <u>Objective:</u> Minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; to protect the summer shoreline habitat for polar bears, walrus, and seals; to prevent contamination of marine waters; loss of important bird habitat; alteration or disturbance of shoreline marshes; and impacts to subsistence resources activities.  <u>Requirement/Standard:</u> No permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines established to support exploration and development activities shall be located in the Coastal Area, which includes all barrier and offshore islands within NPR-A and a coastal strip extending 0.75 mile inland from the coast. (In Alternatives B-1 and C, the coastal strip between the Kogru River and Tangent Point would extend 1 mile inland, instead of 0.75 mile, in order to protect molting geese habitat.) Where, as a result of technological limitations, economics, logistics, or other factors, a facility must be located within 0.75 mile inland of the coastline (Alternatives B-1 and C, 1 mile inland between Kogru River and Tangent Point), the practicality of locating the facility at previously occupied sites such as Camp Lonely, various Husky/USGS drill sites, and Distant Early Warning-Line sites, shall be considered. Use of existing sites within 0.75 mile of the coastline (Alternatives B-1 and C, 1 mile inland between Kogru River and Tangent Point) shall also be acceptable where it is demonstrated that use of such sites will reduce impacts to shorelines or otherwise be environmentally preferable. All lessees/permittees involved in activities in the immediate area must coordinate use of these new or existing sites with all other prospective users. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the Nuiqsut Whaling Captains' Association, and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope. In a case in which the BLM authorizes a permanent oil and gas facility within the Coastal Area, the lessee/permittee shall develop and implement a monitoring plan to assess the effects of the facility and its use on coastal habitat and use.</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>Northwest</b>  <u>Objective:</u> Same.  <u>Requirement/Standard:</u> In the Coastal Area, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines established to support exploration and development activities shall be located at least 0.75 mile inland from the coastline to the extent practicable. Where, as a result of technological limitations, economics, logistics, or other factors, a facility must be located within 0.75 mile inland of the coastline, the practicality of locating the facility at previously occupied sites, such as the former Cape Simpson, Peard Bay, or Wainwright Distant Early Warning-Line sites, shall be considered. Use of existing sites within 0.75 mile of the coastline shall also be acceptable where it is demonstrated that use of such sites will reduce impacts to shorelines or otherwise be environmentally preferable. All lessees/permittees involved in activities in the immediate area must coordinate use of these new or existing sites with all other prospective users.</p>		<p><b><i>K-6 Lease Stipulation – Coastal Area (Alternative B-2 only)</i></b>  <u>Objective:</u> Protect coastal waters and their value as fish and wildlife habitat (including, but not limited to, that for waterfowl, shorebirds, and marine mammals), minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; protect the summer and winter shoreline habitat for polar bears, and the summer shoreline habitat for walrus and seals; prevent loss of important bird habitat and alteration or disturbance of shoreline marshes; and prevent impacts to subsistence resources activities.  <u>Requirement/Standard:</u></p> <p>a. Exploratory well drill pads, production well drill pads, or a central processing facility for oil or gas would not be allowed in coastal waters or on islands between the northern boundary of the Reserve and the mainland, or in inland areas within one mile of the coast. (Note: This would include the entirety the Kasegaluk Lagoon and Peard Bay Special Areas.) Other facilities necessary for oil and gas production within NPR-A that necessarily must be within this area (e.g., barge landing, seawater treatment plant, or spill response staging and storage areas) would not be precluded. Nor would this stipulation preclude infrastructure associated with offshore oil and gas exploration and production or construction, renovation, or replacement of facilities on existing gravel sites. Lessees/permittees shall consider the practicality of locating facilities that necessarily must be within this area at previously occupied sites such as various Husky/USGS drill sites and Distant Early Warning-Line sites. All lessees/permittees involved in activities in the immediate area must coordinate use of these new or existing sites with all other prospective users. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the North Slope Borough, and local whaling captains associations to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope. In a case in which the BLM authorizes a permanent oil and gas facility within the Coastal Area, the lessee/permittee shall develop and implement a monitoring plan to assess the effects of the facility and its use on coastal habitat and use.</p> <p>b. Marine vessels used as part of a BLM-authorized activity shall maintain a 1-mile buffer from the shore when transiting past an aggregation of seals (primarily spotted seals) using a terrestrial haulout unless doing so would endanger human life or violate safe boating practices. Marine vessels shall not conduct ballast transfers or discharge any matter into the marine environment within 3 miles of the coast except when necessary for the safe operation of the vessel.</p> <p>c. Marine vessels used as part of a BLM-authorized activity shall maintain a 0.5-mile buffer from shore when transiting past an aggregation of walrus using a terrestrial haulout.</p>		

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>K-7 Lease Stipulation - Colville River Special Area Northeast</b>  <u>Objective:</u> Prevent or minimize loss of raptor foraging habitat (also see Lease Stipulation K-1; Rivers Area).  <u>Requirement/Standard for Facilities:</u> If necessary to construct permanent facilities within the Colville River Special Area, all reasonable and practicable efforts shall be made to locate permanent facilities as far from raptor nests as feasible. Additionally, within 15 miles of raptor nest sites, significant alteration of high quality foraging habitat shall be prohibited unless the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative. Of particular concern are ponds, lakes, wetlands, and riparian habitats. <b>Note:</b> On a case-by-case basis, and in consultation with appropriate federal and State regulatory and resource agencies, essential pipeline and road crossings will be permitted through these areas where no other feasible or prudent options are available.</p> <p><b>K-7 Lease Stipulation - Colville River Special Area Northwest</b>  <u>Objective:</u> Prevent or minimize loss of raptor foraging habitat.  <u>Requirement/Standard:</u> If necessary to construct permanent facilities within the Colville River Special Area, all reasonable and practicable efforts shall be made to locate permanent facilities as far from raptor nests as feasible. Within 15 mile of raptor nest sites, significant alteration of high quality foraging habitat shall be prohibited unless the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative. Of particular concern are ponds, lakes, wetlands, and riparian habitats. <b>Note:</b> On a case-by case basis, and in consultation with appropriate federal and State regulatory and resource agencies, essential pipeline and road crossings will be permitted through these areas where no other options are available.</p> <p><b>Colville River Special Area Management Plan-Protection 2</b>  <u>Objective:</u> Prevent or minimize loss of arctic peregrine falcon foraging habitat in the Colville River Special Area.  <u>Requirement/Standard:</u> To minimize the direct loss of arctic peregrine falcon foraging habitat in the Colville River Special Area the following measures apply: If necessary to construct permanent facilities within the Colville River Special Area, all</p>	<p><b>K-7 Lease Stipulation – Colville River Special Area</b>  <b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-7 would be a best management practice  <u>Objective:</u> Prevent or minimize loss of raptor foraging habitat (also see Lease Stipulation K-1; Rivers Area).  <u>Requirement/Standard for Facilities:</u> If necessary to construct permanent facilities within the Colville River Special Area, all reasonable and practicable efforts shall be made to locate permanent facilities as far from raptor nests as feasible. Additionally, within 15 miles of raptor nest sites, significant alteration of high quality foraging habitat shall be prohibited unless the lessee can demonstrate on a site-specific basis that impacts would be minimal. Of particular concern are ponds, lakes, wetlands, and riparian habitats. <b>Note:</b> On a case-by-case basis, and in consultation with appropriate federal and State regulatory and resource agencies, essential pipeline and road crossings will be permitted through the Colville River Special Area where no other feasible or prudent options are available.</p> <p>(Colville River Special Area Management Plan Protection 2 would not be changed.)</p>			<p>No comparable provision.</p> <p>(Colville River Special Area Management Plan Protection 2 is deleted.)</p>



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
reasonable and practicable efforts shall be made to locate permanent facilities as far from arctic peregrine falcon nests as feasible. Within 15 miles of arctic peregrine falcon nest sites, significant alteration of high quality foraging habitat shall be prohibited unless the lessee can demonstrate on a site-specific basis that impacts would be minimal or it is determined that there is no feasible or prudent alternative. Of particular concern are ponds, lakes, wetlands, and riparian habitats. <b>Note:</b> On a case-by-case basis, and in consultation with appropriate federal and State regulatory and resource agencies, essential pipeline and road crossings will be permitted through these areas where no other feasible or prudent options are available.				
<p><b><i>K-8a Lease Stipulation - Pik Dunes</i></b>  <u>Objective:</u> Retain unique qualities of the Pik Dunes, including geologic and scenic uniqueness, insect-relief habitat for caribou, and habitat for several uncommon plant species.  <u>Requirement/Standard:</u> Surface structures, except approximately perpendicular pipeline crossings and ice pads, are prohibited within the Pik Dunes.</p>	<p><b><i>K-8a Lease Stipulation – Pik Dunes</i></b>  <b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-8a would be a best management practice.  <u>Objective:</u> Retain unique qualities of the Pik Dunes, including geologic and scenic uniqueness, insect-relief habitat for caribou, and habitat for several uncommon plant species.  <u>Requirement/Standard:</u> Surface structures, except approximately perpendicular pipeline crossings and ice pads, are prohibited within the Pik Dunes.  <i>(Same text as in Northeast NPR-A 2008 Record of Decision)</i></p>			
<p><b><i>K-8b Lease Stipulation–Kasegaluk Lagoon Special Area</i></b>  <u>Objective:</u> Protect the habitat of the fish, waterfowl, and terrestrial and marine wildlife resources of Kasegaluk Lagoon, and protect traditional subsistence uses and public access to and through Kasegaluk Lagoon for current and future generations of North Slope residents.  <u>Requirement/Standard:</u> Within the Kasegaluk Lagoon Special Area, oil and gas leasing is approved subject to the decision to defer the implementation of oil and gas leasing in the “leasing deferral area.” When leasing is implemented, no permanent oil and gas facilities are permitted within the boundary of the Special Area. Geophysical (seismic) exploration is authorized subject to the terms and conditions provided in other applicable required operating procedures. No restrictions are imposed on traditional subsistence activities and access for subsistence purposes.</p>	<p><b><i>K-8b Best Management Practice – Kasegaluk Lagoon Special Area</i></b>  <b>Note: This applies only to Alternatives B-1 and C.</b> There would be no comparable provision for Alternatives B-2 and D.    This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-8b would be a best management practice  <u>Objective:</u> Protect the habitat of the fish, waterfowl, and terrestrial and marine wildlife resources of Kasegaluk Lagoon, and protect subsistence uses and public access to and through Kasegaluk Lagoon for current and future generations of North Slope residents.  <u>Requirement/Standard:</u> No permanent oil and gas surface facilities are permitted in the Kasegaluk Lagoon and an area one mile inland from the lagoon.</p>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b>K-9 Lease Stipulation – Caribou Movement Corridor Northeast</b>  <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and rearing, insect-relief, and migration) in the area extending from the eastern shore of Teshekpuk Lake to approximately 6 miles eastward towards the Kogru Inlet [River] and the area adjacent to the northwest corner of Teshekpuk Lake.  <u>Requirement/Standard:</u> Within the Caribou Movement Corridors, no permanent oil and gas facilities, except for pipelines, will be allowed on the approximately 60,500 (approximately 50,800 acres east of Teshekpuk Lake, and approximately 9,700 acres northwest of Teshekpuk Lake) illustrated on Map 2-1K. Prior to the permitting of a pipeline in the Caribou Movement Corridors, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. <b>Note:</b> In addition to the general lease stipulations and required operating procedures, site-specific lease stipulations, i.e., K-3, K-4, K-5, and K-11 will also apply.  <b>Northwest</b>            No comparable provision.</p>				No comparable provision.
<p><b>K-10 Lease Stipulation – Southern Caribou Calving Area Northeast</b>  <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and post calving, and insect-relief) in the area south/southeast of Teshekpuk Lake:  <u>Requirement/Standard:</u> Within the Southern Caribou Calving Area, no permanent oil and gas facilities, except pipelines, would be allowed on the approximately 240,000 acres illustrated on Map 2-1K. Prior to the permitting of a pipeline in the Southern Caribou Calving Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. <b>Note:</b> In addition to the general stipulations and required operating procedures, site-specific Stipulations K-4, K-5, K-6, and K-11 would also apply.</p>				No comparable provision.

**K-9 Lease Stipulation/Best Management Practice – Teshekpuk Lake Caribou Movement Corridors**

**Note:** This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-9 would be a best management practice. Alternatives B-1 and B-2 would generally prohibit non-subsistence permanent infrastructure in all, or nearly all, of these areas.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and rearing, insect-relief, and migration) in the area extending from the eastern shore of Teshekpuk Lake eastward to the Kogru River and the area between Teshekpuk Lake and an unnamed lake in T16–17 N, R8 W, U.M.

Requirement/Standard: Within the Caribou Movement Corridors, no permanent oil and gas facilities, except for pipelines or, in the case of Alternative B-2 only other infrastructure associated with offshore oil and gas exploration and production, will be allowed on the approximately 62,100 (approximately 50,800 acres east of Teshekpuk Lake, and approximately 11,300 acres northwest of Teshekpuk Lake) illustrated on Map 2-3K. Prior to the permitting of permanent oil and gas infrastructure in the Caribou Movement Corridors, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives.

**K-10 Lease Stipulation/Best Management Practice – Teshekpuk Lake Southern Caribou Calving Area**

**Note:** This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-10 would be a best management practice. Alternatives B-1 and B-2 would generally prohibit non-subsistence permanent infrastructure in all, or nearly all, of this area.

Objective: Minimize disturbance and hindrance of caribou, or alteration of caribou movements (that are essential for all season use, including calving and post calving, and insect-relief) in the area south/southeast of Teshekpuk Lake.

Requirement/Standard: Within the Southern Caribou Calving Area, no permanent oil and gas facilities, except pipelines or, in the case of Alternative B-2 only other infrastructure associated with offshore oil and gas exploration and production, will be allowed on the approximately 240,000 acres illustrated on Map 2-3K. Prior to the permitting of permanent oil and gas infrastructure in the Southern Caribou Calving Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to



### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<b>Northwest</b> No comparable provision.	federal, State, and North Slope Borough representatives.  <b>Note:</b> In addition to the general stipulations and best management practices, site-specific <i>Stipulations K-4, K-5, K-6, and K-11</i> would also apply.			
<b>K-11 Lease Stipulation: Lease Tracts A-G Northeast</b> <b>Objective:</b> To protect key surface resources and subsistence resources/activities resulting from permanent oil and gas development and associated activities. <b>Requirement Standard:</b> Permanent surface disturbance resulting from oil and gas activities is limited to 300 acres within the following described lease tracts (Map 2-1K); this does not include surface disturbance activities from pipeline construction. Existing gravel pads within these tracts would not count against the 300-acre limit. A pipeline will be considered after a workshop is convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. (No alternative procedures will be approved). (Acreages are based on GIS calculations and are approximate): A. Total Acreage: approximately 52,700: • 26,500 acres = Restricted surface occupancy for permanent oil and gas facilities excluding pipelines (the 23,350 acres includes 5,605 acres of overlap with the Coastal area restrictions). • 26,200 acres = Area open to development subject to general and site specific lease stipulations and required operating procedures. The total new development footprint cannot exceed 300 acres (0.6% of total acreage). B. Total Acreage: approximately 55,000: • 38,200 acres = Restricted surface occupancy for permanent oil and gas facilities, excluding pipelines (the 33,478 acres includes 5,131 acres of overlap with the Coastal area restrictions). • 16,800 acres = Area open to development subject to general and site-specific lease stipulations and required operating procedures. The total new development footprint cannot exceed 300 acres (0.5% of total acreage).	No comparable provision. Under Alternatives B-1 and B-2, leasing is unavailable in the area covered by tracts A-G.		<b>K-11 Lease Stipulation – Lease Tracts A-G Objective:</b> To protect key surface resources and subsistence resources/activities resulting from permanent oil and gas development and associated activities. <b>Requirement Standard:</b> Permanent surface disturbance resulting from oil and gas activities is limited to 300 acres within the following described lease tracts (Maps 2-3K and 2-4K); this does not include surface disturbance activities from pipeline construction. Existing gravel pads within these tracts would not count against the 300-acre limit. A pipeline will be considered for development of one or more of these tracts after a workshop is convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. The workshop participants will include but need not be limited to Federal, state, and North Slope Borough representatives. (No alternative procedures will be approved). (Acreages are based on GIS calculations and are approximate): A. Total Acreage: approximately 52,700: The total new development footprint cannot exceed 300 acres (0.6% of total acreage). B. Total Acreage: approximately 55,000: The total new development footprint cannot exceed 300 acres (0.5% of total acreage). C. Total Acreage: approximately 46,100: The total new development footprint cannot exceed 300 acres (0.7% of total acreage). D. Total Acreage: approximately 54,500: The total new development footprint cannot exceed 300 acres (0.6% of total acreage). E. Total Acreage: approximately 56,500: The total new development footprint cannot	

**ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS**

<b>Alternative A</b>	<b>Alternative B-1</b>	<b>Alternative B-2 Preferred Alternative</b>	<b>Alternative C</b>	<b>Alternative D</b>
<p>C. Total Acreage: approximately 46,100:</p> <ul style="list-style-type: none"> <li>• 32,500 acres = Restricted surface occupancy for permanent oil and gas facilities, excluding pipelines.</li> <li>• 3,600 acres = Area open to development subject to general and site-specific lease stipulations and required operating procedures.</li> </ul> <p>The total new development footprint cannot exceed 300 acres (0.7% of total acreage).</p> <p>D. Total Acreage: approximately 54,500:</p> <ul style="list-style-type: none"> <li>• 46,900 acres = Restricted surface occupancy for permanent oil and gas facilities excluding pipelines.</li> <li>• 7,700 acres = Area open to development subject to general and site-specific lease stipulations and required operating procedures.</li> </ul> <p>The total new development footprint cannot exceed 300 acres (0.6% of total acreage).</p> <p>E. Total Acreage: approximately 56,500:</p> <ul style="list-style-type: none"> <li>• 32,200 acres = Restricted surface occupancy for permanent oil and gas facilities, excluding pipelines.</li> <li>• 24,300 acres = Area open to development subject to general and site-specific lease stipulations and required operating procedures.</li> </ul> <p>The total new development footprint cannot exceed 300 acres (0.5% of total acreage).</p> <p>F. Total Acreage: approximately 57,100:</p> <ul style="list-style-type: none"> <li>• 43,200 acres = Restricted surface occupancy for permanent oil and gas facilities, excluding pipelines.</li> <li>• 4,900 acres = Restricted area open to development subject to the results of 3-year study requirement to determine appropriate placement of permanent facility(s) (Map 2-1).</li> <li>• 9,000 acres = Area open to development subject to general and site specific lease stipulations and required operating procedures.</li> </ul> <p>The total new development footprint cannot exceed 300 acres (0.5% of total acreage).</p> <p>G. Total Acreage: approximately 56,800:</p> <ul style="list-style-type: none"> <li>• 48,700 acres = Restricted surface occupancy for permanent oil and gas facilities excluding pipelines.</li> <li>• 300 acres = Restricted area open to development subject to the results of 3-year study requirement to determine appropriate placement of permanent facility(s) (Map 2-1K).</li> <li>• 7,800 acres = Area open to development subject to general and site specific lease stipulations and required operating</li> </ul>			<p>exceed 300 acres (0.5% of total acreage).</p> <p>F. Total Acreage: approximately 57,100: The total new development footprint cannot exceed 300 acres (0.5% of total acreage).</p> <p>G. Total Acreage: approximately 56,800: The total new development footprint cannot exceed 300 acres (0.5% of total acreage).</p>	

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>procedures.</p> <p>The total new development footprint cannot exceed 300 acres (0.5% of total acreage).</p> <p><b>Northwest</b> No comparable provision.</p>				
<p>No comparable provision.</p>	<p><b><i>K-12 Lease Stipulation/Best Management Practice – Western Arctic Herd Habitat Area</i></b>  <b>Note:</b> This measure would be applied to relevant new leases. On lands unavailable for leasing in the respective alternative, K-12 would be a best management practice. In each of the alternatives, this stipulation applies to the configuration of the Utukok River Uplands Special Area proposed for the respective alternative.  <u>Objective:</u> Minimize disturbance and hindrance of caribou, or alteration of caribou movements through the Utukok River Uplands Special Area that are essential for all season use, including calving and rearing, insect-relief, and migration.  <u>Requirement/Standard:</u> In the Utukok River Uplands Special Area the following standards will be applied to permitted activities:</p> <ul style="list-style-type: none"> <li>a. Before authorization of construction of permanent facilities, the lessee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the Western Arctic Herd has been completed within the last 10 years. The study shall include a minimum of four years of current data on the Western Arctic Herd's movements and the study design shall be approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies and the Western Arctic Caribou Herd Working Group. The study should provide information necessary to determine facility (including pipeline) design and location. Lessees may submit individual study proposals or they may combine with other lessees in the area to do a single, joint study for the entire Utukok River Uplands Special Area. Study data may be gathered concurrently with other activities as approved by the authorized officer and in consultation with the appropriate federal, State, and North Slope Borough wildlife and resource agencies. A final report of the study results will be prepared and submitted. Prior to the permitting of a pipeline in the Utukok River Uplands Special Area, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife (specifically the Western Arctic Herd) and subsistence resources. The workshop participants will include but will not be limited to federal, State, and North Slope Borough representatives. All of these modifications will increase protection for caribou and other wildlife that utilize the Utukok River Uplands Special Area during all seasons.</li> <li>b. Within the Utukok River Uplands Special Area, lessees shall orient linear corridors when laying out oil and gas field developments to address migration and corralling effects and to avoid loops of road and/or pipeline that connect facilities.</li> <li>c. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required by the authorized officer, after consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies, in the Utukok River Uplands Special Area where pipelines potentially impede caribou movement.</li> <li>d. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline</li> </ul>			

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
		<p>and pad construction, but not drilling from existing production pads) shall be suspended within Utukok River Uplands Special Area from May 20 through August 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement is to restrict activities that will disturb caribou during calving and insect-relief periods. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. The lessee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.</p> <p>e. The following ground and air traffic restrictions shall apply to permanent oil and gas-related roads in the areas and time periods indicated:</p> <ol style="list-style-type: none"> <li>1. Within the Utukok River Uplands Special Area, from May 20 through August 20, traffic speed shall not exceed 15 miles per hour when caribou are within 0.5 mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</li> <li>2. The lessee or a contractor shall observe caribou movement from May 20 through August 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped:               <ol style="list-style-type: none"> <li>a. Temporarily to allow a crossing by 10 or more caribou. Sections of road will be evacuated whenever an attempted crossing by a large number of caribou appears to be imminent. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation.</li> <li>b. By direction of the authorized officer throughout a defined area for up to four weeks to prevent displacement of calving caribou.</li> </ol> <p>The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.</p> </li> <li>3. Major equipment, materials, and supplies to be used at oil and gas work sites in the Utukok River Uplands Special Area shall be stockpiled prior to or after the period of May 20 through August 20 to minimize road traffic during that period.</li> <li>4. Within the Utukok River Uplands Special Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through August 20 unless doing so endangers human life or violates safe flying practices. Authorized users of the NPR-A may be restricted from using aircraft larger than a Twin Otter, and limited to an average of one fixed-wing aircraft takeoff and landing per day per airstrip, except for emergency purposes. Restrictions may include prohibiting the use of aircraft larger than a Twin Otter by authorized users of the NPR-A, including oil and gas lessees, from May 20 through August 20 within the Utukok River Uplands Special Area, except for emergency purposes. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will</li> </ol>		

### ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
	<p>be restricted to the minimum necessary to collect such data.</p> <p>5. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, and 2,000 feet above ground level over the Utukok River Uplands Special Area from May 20 through August 20, unless doing so endangers human life or violates safe flying practices. Caribou wintering ranges will be defined annually by the authorized officer in consultation with the Alaska Department of Fish and Game. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.</p>			

### SUMMER VEHICLE TUNDRA ACCESS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p><b><i>L-1 Required Operating Procedure Northeast</i></b>  <b>Objective:</b> Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.  <b>Requirement/Standard:</b> On a case-by-case basis, BLM may permit low-ground-pressure vehicles to travel off of gravel pads and roads during times other than those identified in Required Operating Procedure C-2a. Permission for such use would only be granted after an applicant has:</p> <ul style="list-style-type: none"> <li>a. Submitted studies satisfactory to the authorized officer of the impacts on soils and vegetation of the specific low-ground-pressure vehicles to be used. These studies should reflect use of such vehicles under conditions similar to those of the route proposed for use and should demonstrate that the proposed use would have no more than minimal impacts to soils and vegetation.</li> <li>b. Submitted surveys satisfactory to the authorized officer of subsistence uses of the area as well as of the soils, vegetation, hydrology, wildlife and fish (and their habitats), paleontological and archaeological resources, and other resources as required by the authorized officer.</li> </ul>	<p><b><i>L-1 Best Management Practice</i></b>  <b>Objective:</b> Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.  <b>Requirement/Standard:</b> On a case-by-case basis, BLM may permit low-ground-pressure vehicles to travel off of gravel pads and roads during times other than those identified in Best management Practice C-2a. Permission for such use would only be granted after an applicant has:</p> <ul style="list-style-type: none"> <li>a. Submitted studies satisfactory to the authorized officer of the impacts on soils and vegetation of the specific low-ground-pressure vehicles to be used. These studies should reflect use of such vehicles under conditions similar to those of the route proposed for use and should demonstrate that the proposed use would have no more than minimal impacts to soils and vegetation.</li> <li>b. Submitted surveys satisfactory to the authorized officer of subsistence uses of the area as well as of the soils, vegetation, hydrology, wildlife and fish (and their habitats), paleontological and archaeological resources, and other resources as required by the authorized officer.</li> </ul>			

## SUMMER VEHICLE TUNDRA ACCESS

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
<p>c. Designed and/or modified the use proposal to minimize impacts to the authorized officer's satisfaction. Design steps to achieve the objectives and based upon the studies and surveys may include, but not be limited to, timing restrictions (generally it is considered inadvisable to conduct tundra travel prior to August 1 to protect ground-nesting birds), shifting of work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring. At the discretion of the authorized officer, the plan for summer tundra vehicle access may be included as part of the spill prevention and response contingency plan required by 40 CFR 112 (Oil Pollution Act) and Required Operating Procedure A-4.</p> <p><b>Northwest</b> No comparable provision.</p>	<p>c. Designed and/or modified the use proposal to minimize impacts to the authorized officer's satisfaction. Design steps to achieve the objectives and based upon the studies and surveys may include, but not be limited to, timing restrictions (generally it is considered inadvisable to conduct tundra travel prior to August 1 to protect ground-nesting birds), shifting of work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring. At the discretion of the authorized officer, the plan for summer tundra vehicle access may be included as part of the spill prevention and response contingency plan required by 40 CFR 112 (Oil Pollution Act) and Required Operating Procedure A-4.</p> <p><i>(Same text as in Northeast NPR-A 2008 Record of Decision)</i></p>			

## GENERAL WILDLIFE AND HABITAT PROTECTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
No comparable provision.	<p><b><i>M-1 Best Management Practice</i></b></p> <p><b>NOTE: This best management practice is only applicable to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Minimize disturbance and hindrance of wildlife, or alteration of wildlife movements through the NPR-A.</p> <p><u>Requirement/Standard:</u> Chasing wildlife with ground vehicles is prohibited. Particular attention will be given to avoid disturbing caribou.</p>			
No comparable provision.	<p><b><i>M-2 Best Management Practice</i></b></p> <p><b>NOTE: This best management practice is applicable only to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Prevent the introduction, or spread, of non-native, invasive plant species in the NPR-A.</p> <p><u>Requirement/Standard:</u> Certify that all equipment and vehicles (intended for use either off or on roads) are weed-free prior to transporting them into the NPR-A. Monitor annually along roads for non-native invasive species, and initiate effective weed control measures upon evidence of their introduction. Prior to operations in the NPR-A, submit a plan for the BLM's approval, detailing the methods for cleaning equipment and vehicles, monitoring for weeds and weed control.</p>			



## GENERAL WILDLIFE AND HABITAT PROTECTION

Alternative A	Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C	Alternative D
No comparable provision.	<p><b><i>M-3 Best Management Practice</i></b></p> <p><b>NOTE: This best management practice is applicable only to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Minimize loss of populations of, and habitat for, plant species designated as Sensitive by the BLM in Alaska.</p> <p><u>Requirement/Standard:</u> If a development is proposed in an area that provides potential habitat for a BLM Sensitive Plant Species, the development proponent would conduct surveys at appropriate times of the summer season and in appropriate habitats for the Sensitive Plant Species that might occur there. The results of these surveys will be submitted to the BLM with the application for development.</p>			
No comparable provision.	<p><b><i>M-4 Best Management Practice</i></b></p> <p><b>NOTE: This best management practice is applicable only to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives.</p> <p><u>Objective:</u> Minimize loss of individuals of, and habitat for, mammalian species designated as Sensitive by the BLM in Alaska.</p> <p><u>Requirement/Standard:</u> If a development is proposed in an area that provides potential habitat for the Alaska tiny shrew, the development proponent would conduct surveys at appropriate times of the year and in appropriate habitats in an effort to detect the presence of the shrew. The results of these surveys will be submitted to BLM with the application for development.</p>			

## WASTE PREVENTION, HANDLING, DISPOSAL, SPILLS, AND PUBLIC

## SAFETY

**A-3 Best Management Practice**

***Objective:** Minimize pollution through effective hazardous-materials contingency planning.*

***Requirement/Standard:** For oil- and gas-related activities, a hazardous materials emergency contingency plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures in the plan applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of best management practices if approved by the authorized officer. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal, State, and North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures.*

*In addition contingency plans related to facilities developed for oil production shall include requirements to:*

- a. Provide refresher spill-response training to North Slope Borough and local community spill-response teams on a yearly basis.*
- b. Plan and conduct a major spill-response field-deployment drill annually.*
- c. Prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve-Alaska operating area. Planning shall include development and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's/permittee's operating area and areas outside the lessee's/permittee's operating area that could be affected by their activities. The specific area to be mapped shall be defined in the lease agreement and approved by the authorized officer in consultation with the US Fish and Wildlife Service and appropriate resource agencies. Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the authorized officer, the US Fish and Wildlife Service and in consultation with other federal, State, and North Slope Borough resource and regulatory agencies.*

**A-4 Best Management Practice**

***Objective:** Minimize the impact of contaminants on fish, wildlife, and the environment; including wetlands, marshes and marine waters; as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.*

***Requirement/Standard:** Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees shall develop a comprehensive spill prevention and response contingency plan per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:*

- a. On-site Clean-up Materials. Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc.) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.*
- b. Storage Containers. Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic operations, fuel, other petroleum products, and other liquid chemicals designated by the authorized officer that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of waterbodies, fuel containers are to be stored within appropriate containment.*
- c. Liner Materials. Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.*
- d. Permanent Fueling Stations. Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.*
- e. Proper Identification of Containers. All fuel containers,*



including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased. f. Notice of Reportable Spills. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the authorized officer as soon as possible, but no later than 24 hours after occurrence. g. Identification of Oil Pans ("duck ponds"). All oil pans shall be marked with the responsible party's name.

#### ***A-5 Best Management Practice***

Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife, and the environment.

Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception of small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g., portable generators and water pumps, will be permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

#### ***A-6 Best Management Practice***

Objective: Minimize the impact on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process.

Requirement/Standard: Surface discharge of reserve-pit fluids is prohibited.

#### ***A-7 Best Management Practice***

Objective: Minimize the impacts to the environment of disposal of produced fluids recovered during the development phase on fish, wildlife, and the environment.

Requirement/Standard: Discharge of produced water ~~in upland areas~~ onshore on land in in freshwaters, in coastal lagoons and in marine waters is prohibited.

#### ***A-8 Best Management Practice***

Objective: Minimize conflicts resulting from interaction between humans and bears during oil and gas activities.

Requirement/Standard: Oil and gas lessees, their contractors and subcontractors, and all other personnel associated with authorized oil and gas activities will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These bear-interaction plans shall be developed in consultation with and approved by the U.S Fish & Wildlife Service and the Alaska Department of Fish and Game. The plans shall include specific measures to Identify and establish:

- a. Methods and procedures to minimize attraction of bears to the work sites, e.g., bear resistant containers for all waste categories, waste handling, waste removal and disposal.
- b. The organization and layout of buildings and work sites to minimize human/bear interactions.
- c. Communication methods and procedures to warn personnel of bears near or on work sites.
- d. d. Identify and establish personnel, methods, procedures, and training, if authorized, to discourage bears from approaching the work site using passive and active, non-injurious, less-lethal methods.
- e. Identify and establish contingencies in the event bears do not leave the work site or cannot be discouraged by authorized personnel.
- f. Identify and establish methods and procedures for the proper storage and disposal of materials that may be attractive, or toxic, or both to bears.

- e.g., bear resistant waste containers.
- g. A systematic record of bears on the work site and in the immediate area.
- h. Methods, procedures, and training to identify and avoid known or observed polar bear dens by at least 1-mile, and grizzly bear dens by at least 0.5-mile, unless alternative protective measures are approved by the authorized officer in consultation with the U.S. Fish and Wildlife Service, or the Alaska Department of Fish and Game, or both as appropriate.
- i. Methods and procedures to minimize disturbance to polar bear dens from oil and gas activities.

~~Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:~~

- ~~a. Minimize attraction of bears to the work sites.~~
- ~~b. Organize layout of buildings and work sites to minimize human/bear interactions.~~
- ~~c. Warn personnel of bears near or on work sites and identify proper procedures to be followed.~~
- ~~d. Establish procedures, if authorized, to discourage bears from approaching the work site.~~
- ~~e. Provide contingencies in the event bears do not leave the work site or cannot be discouraged by authorized personnel.~~
- ~~f. Discuss proper storage and disposal of materials that may be toxic to bears.~~
- ~~g. Provide a systematic record of bears on the work site and in the immediate area~~

#### *A-9 Best Management Practice*

Objective: Reduce air quality impacts.

Requirement/Standard:

- a. To the extent practicable, all oil and gas operations (vehicles and equipment) must be powered by natural gas or electric power rather than diesel fuel. To the extent natural gas and electric power are not practicable, the permittee will use gasoline rather than diesel to the extent practicable. Any vehicles and equipment that require diesel fuel must use ULSD as defined by the Alaska Department of Conservation, Division of Air Quality.



*A-10 Best Management Practice*

Objective: Prevent unnecessary or undue degradation of the air and lands and protect health.

Requirement/Standard: This measure includes the following elements:

- a. Prior to initiation of a NEPA analysis for an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source (hereafter project), the authorizing officer (BLM) may require the project proponent to provide a minimum of one year of baseline ambient air monitoring data for any pollutant(s) of concern as determined by the authorized officer if no representative air monitoring data are available for the project area, or existing representative ambient air monitoring data are insufficient, incomplete, or do not meet minimum air monitoring standards set by the Alaska DEC or the EPA. If the authorized officer determines that baseline monitoring is required, this pre-analysis data must meet Alaska DEC and EPA air monitoring standards, and cover the year immediately prior to the submittal. Pre-project monitoring may not be appropriate where the life of the project is less than one year.
- b. The authorized officer may require monitoring for the life of the project depending on the magnitude of potential air emissions from the project, proximity to a federally mandated Class I area or Class II area (as identified on a case-by-case basis by Alaska DEC or a federal land management agency), or population center, location within or proximity to a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during NEPA undertaken for the project.
- c. If ambient air monitoring indicates that project-related emissions are causing or contributing to impacts that would cause unnecessary or undue degradation of the lands, cause exceedances of NAAQS, or fail to protect health (either directly or through use of subsistence resources), the authorized officer may require changes in activities at any time to reduce these emissions to comply with the NAAQS and/or minimize impacts to AQRVs. Within the scope of BLM's authority, the BLM the authorized officer may require additional emission control strategies to minimize or reduce impacts to air quality. The leasee will provide funding for monitoring to identify and address concerns related to air quality. Monitoring reports will be provided to BLM, the State, and the local community and tribal government.
- d. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the project proponent shall prepare (and submit for BLM approval by the authorized officer) an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project, including reasonably foreseeable air pollutant emissions of criteria air pollutants, volatile organic compounds, hazardous air pollutants, and greenhouse gases estimated for each year for the life of the project. The BLM authorized officer will use this estimated emissions inventory to identify pollutants of concern and to determine the appropriate level of air analysis to be conducted for the proposed project.
- e. For an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the BLM authorized officer may require the proponent to provide an emissions reduction plan that



includes a detailed description of operator committed measures to reduce project related air pollutant emissions including, but not limited to greenhouse gases, mercury and other heavy metals, and fugitive dust.

f. Due to potential air quality concerns, an application to develop a central production facility, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source, the authorized officer will require supplementary analysis for purposes of evaluating project direct, indirect or cumulative impacts to air quality. This may include preparing a comprehensive emissions inventory, performing air quality modeling, and initiating interagency consultation with affected land managers and air quality regulators to determine potential mitigation options for any predicted significant impacts from the proposed development. Potential mitigation may include limiting the time, place, and pace of any proposed development, as well as providing for the best air quality control technology (BACT) and/or management practices necessary to achieve area-wide air resource protection objectives. Mitigation measures would be analyzed through the appropriate level of NEPA analysis to determine effectiveness, and will be required or implemented as a permit condition of approval (COA). At a minimum, all projects and permitted uses implemented under this lease will comply with all applicable National Ambient Air Quality Standards (NAAQS) and ensure Air Quality Related Values (AQRV) are protected in nearby Class I or Class II areas (as specified on a case-by-case basis by Alaska DEC or a federal land management agency) that are afforded additional air quality protection under the Clean Air Act (CAA), or other applicable statutes.

The authorized officer will consult with the US Fish and Wildlife Service and other appropriate federal, State, and/or local agencies regarding appropriate analysis to inform his/her decision and avoid duplication of effort.

g. The BLM authorized officer may require air quality mitigation measures and strategies within its authority (and in consultation with local, state, federal, and tribal agencies with responsibility for managing air resources) in addition to regulatory requirements and proponent committed emission reduction measures, and for emission sources not otherwise regulated by Alaska DEC or EPA, if the air quality analysis shows potential future impacts to NAAQS or AAAQS or impacts above specific levels of concern for air quality related values (AQRVs).

h. (Alternative B-2 only) Publicly available reports on air quality baseline monitoring, emissions inventory, and modeling results developed in conformance with this best management procedure shall be provided by the project proponent to the North Slope Borough and to local communities and tribes in a timely manner.



***A-11 Best Management Practice***

**Objective:** Ensure that permitted activities do not create human health risks through contamination of subsistence foods.

**Requirement/Standard:** A lessee proposing a permanent oil and gas development shall design and implement a monitoring study of contaminants in locally-used subsistence foods. The monitoring study shall examine subsistence foods for all contaminants that could be associated with the proposed development. The study shall identify the level of contaminants in subsistence foods prior to the proposed permanent oil and gas development and monitor the level of these contaminants throughout the operation and abandonment phases of the development. If ongoing monitoring detects a measurable and persistent increase in a contaminant in subsistence foods, the lessee shall design and implement a study to determine how much, if any, of the increase in the contaminant in subsistence foods originates from the lessee's activities. If the study determines that a portion of the increase in contamination in subsistence foods is caused by the lessee's activities, the authorized officer may require changes in the lessee's processes to reduce or eliminate emissions of the contaminant. The design of the study/studies must meet the approval of the authorized officer and the US Fish and Wildlife Service. The authorized officer in consultation with US Fish and Wildlife Service and other appropriate federal, State, and North Slope Borough agencies and the Native Village of Kaktovik and Venetie Tribal Government prior to approving the study/studies design. The authorized officer, in consultation with or at the recommendation of the US Fish and Wildlife Service, may require/authorize changes in the design of the studies throughout the operations and abandonment period, or terminate or suspend studies if results warrant.

***A-12 Best Management Practice***

**Objective:** To minimize negative health impacts associated with oil spills.

**Requirement/Standard:** If an oil spill with potential impacts to public health occurs, the BLM, in undertaking its oil spill responsibilities, will consider:

- a. Immediate health impacts and responses for affected communities and individuals.
- b. Long-term monitoring for contamination of subsistence food sources.
- c. Long-term monitoring of potential human health impacts.
- d. Perceptions of contamination and subsequent changes in consumption patterns.
- e. Health promotion activities and communication strategies to maintain the consumption of traditional food.

**WATER USE FOR PERMITTED ACTIVITIES*****B-1 Best Management Practice***

**Objective:** Maintain populations of, and adequate habitat for, fish and invertebrates.

**Requirement/Standard:** Withdrawal of unfrozen water from rivers and streams during winter is prohibited. The removal of ice aggregate from grounded areas ≤4-feet deep may be authorized from rivers on a site- specific basis.



**B-2 Best Management Practice**

**Objective:** Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish, invertebrates, and waterfowl.

**Requirement/Standard:** Withdrawal of unfrozen water from lakes and the removal of ice aggregate from grounded areas  $\leq 4$ -feet deep may be authorized on a site-specific basis depending on water volume and depth and the waterbody's fish community. Current water use requirements are:

- a. Lakes with sensitive fish (i.e., any fish except ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; only ice aggregate may be removed from lakes that are  $\leq 7$ -feet deep.
- b. Lakes with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet; only ice aggregate may be removed from lakes that are  $\leq 5$ .
- c. Lakes with no fish present, regardless of depth: water available for use is limited to 35% of total lake volume.
- d. In lakes where unfrozen water and ice aggregate are both removed, the total use shall not exceed the respective 15%, 30%, or 35% volume calculations.
- e. Additional modeling or monitoring may be required to assess water level and water quality conditions before, during, and after water use from any fish-bearing lake or lake of special concern.
- f. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. Note: All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Fish and Game, Division of Habitat.
- g. Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.
- h. Additional modeling and monitoring of lake recharge may be required to ensure natural hydrologic regime, water quality, and aquatic habitat for migratory birds is maintained.

**WINTER OPERATIONS (OVERLAND MOVES, SEISMIC EXPLORATION, EXPLORATORY DRILLING, ETC)**

The following required operating procedures/best management practices apply to overland and over-ice moves, seismic work, and any similar cross-country vehicle use of vehicles and heavy equipment on non-road surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.

**C-1 Best Management Practice**

**Objective:** Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.

**Requirement/Standard:**

- a. All oil and gas activity, including cross-country use of vehicles, equipment, and seismic survey activity, is prohibited within 0.5 mile of known or observed grizzly bear dens unless alternative protective measures are approved by the authorized officer in consultation with US Fish and Wildlife Service and Alaska Department of Fish and Game.
- b. All oil and gas activity, including cross-country use of vehicles, equipment, and seismic survey activity, is prohibited within 1-mile of known or observed polar bear dens unless alternative protective measures are approved by the authorized officer in consultation with the U.S. Fish and Wildlife Service.
- c. All oil and gas activity, including cross-country use of vehicles, equipment, and seismic survey activity, is prohibited within 1-mile of known or observed seal birthing lairs unless alternative protective measures are approved by the authorized officer in consultation with the National Oceanographic and Atmospheric Administration.



d. Between October 30 and April 15 of any year, operators working within polar bear denning, and seal birthing habitat, shall conduct a survey for polar bear dens and seal birthing lairs in consultation with the U.S. Fish and Wildlife Service, or the National Oceanographic and Atmospheric Administration, or both as appropriate, throughout the planned area of activities and before initiating activities.

~~a. Cross country use of heavy equipment and seismic activity is prohibited within 0.5 mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.~~

~~b. Cross country use of heavy equipment and seismic activity is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators near coastal areas shall conduct a survey for potential polar bear dens and seal birthing lairs and consult with the USFWS and/or NOAA Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.~~

~~(Text is same as in Northeast NPR A 2008 Record of Decision)~~

### **C-2 Best Management Practice**

Objective: Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

Requirement/Standard:

a. Ground operations shall be allowed only when frost depth are at sufficient depths and snow cover is at sufficient depths and density to protect the tundra, as determined by the authorized officer and the US Fish and Wildlife Service. Soils should be frozen to at least -5C at least 30 cm below the lowest surface height (e.g. intertussock space). Snow depth and snow density should amount to no less than a Snow Water Equivalent of 3" over the highest vegetated surface (e.g. top of tussock). Ground operations shall cease when the spring snowmelt begins when snow depth and density no longer meet criteria.

b. Snow depth and density measurements should reflect conditions at the time of planned operations.

Table for Snow Depth x Density to achieve SWE of 3"

Snow Specific Gravity	Needed Snow Depth (inches)
0.05	60
0.1	30
0.15	20
0.2	15

0.25	12
0.3	10
0.35	9
0.4	8
0.45	7
0.5	6

- b. Low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. Low- ground-pressure vehicles shall be selected and operated in a manner that eliminates direct impacts to the tundra by shearing, scraping, or excessively compacting the tundra mat. Note: This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.
- c. Bulldozing of tundra mat and vegetation to create trails or seismic lines is prohibited. Clearing of drifted snow is allowed on existing snow trails, snow pads for camps, ice roads, or ice pads seismic to the extent that the tundra mat is not disturbed.
- d. To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern, as approved by the authorizing officer. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.
- e. The location of ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.
- f. To minimizes changes in snow distribution resulting from oil and gas activities that could impact bear denning habitat and water quality and quantity, the use of snowfences will require approval by the authorized officer in consultation with the US Fish and Wildlife Service.
- g. Seismic operations and winter overland travel may be monitored by agency representative(s) and operator may be required to accommodate the agency representative(s) during operations.



**C-3 Best Management Practice**

**Objective:** Maintain natural spring (break-up) runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality and protect stream banks.

**Requirement/Standard:** Crossing of waterway courses shall be made using a low-angle approach. Crossings that are reinforced with additional snow or ice ("bridges") shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris.

**C-4 Best Management Practice**

**Objective:** Avoid additional freeze-down of aquatic habitat ~~deep water pools~~ harboring over-wintering fish and invertebrates used by fish.

**Requirement/Standard:** Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates and water quality they rely on. Rivers, streams, and lakes shall be crossed at areas of grounded ice or with the approval of the authorizing officer and US Fish and Wildlife Service, and it has been demonstrated no addition impacts will occur to fish or invertebrates. ~~Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers, streams, and lakes shall be crossed at areas of grounded ice whenever possible.~~

**C-5 Best Management Practice**

**Objective:** Minimize the effects of high-intensity acoustic energy from seismic surveys on fish.

**Requirement/Standard:**

**a. Seismic surveys will not be conducted over unfrozen water with fish overwintering potential.**

- a. ~~When conducting vibroseis-based surveys above potential fish overwintering areas (water 6 feet deep or greater, ice plus liquid depth), operators shall follow recommendations by Morris and Winters (2005): only a single set of vibroseis shots should be conducted if possible; if multiple shot locations are required, these should be conducted with minimal delay; multiple days of vibroseis activity above the same overwintering area should be avoided if possible.~~
- b. When conducting air gun-based surveys in freshwater, operators shall follow standard marine mitigation measures that are applicable to fish (e.g., Minerals Management Service 2006): operators will use the lowest sound levels feasible to accomplish their data-collection needs; ramp-up techniques will be utilized (ramp-up involves the gradual increase in emitted sound levels beginning with firing a single air gun and gradually adding air guns until the desired operating level of the full array is obtained).
- c. Explosive-based surveys are prohibited.
- ~~e. When conducting explosive-based surveys, operators shall follow setback distances from fish-bearing waterbodies based on requirements outlined by Alaska Department of Fish and Game (1991).~~

**OIL AND GAS EXPLORATORY DRILLING**

***D-1 Lease Stipulation***

Objectives: Protect water quality in fish-bearing rivers, streams, and lakes from blowouts and minimize alteration of riparian habitat.

Requirement/Standard: Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes.

***D-2 Lease Stipulation***

Objective: Minimize surface impacts from exploratory drilling.

Requirement/Standard: Construction of permanent or gravel oil and gas facilities shall be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.

**FACILITY DESIGN AND CONSTRUCTION*****E-1 Best Management Practice***

Objective: Protect subsistence use and access to subsistence hunting and fishing areas and minimize the impact of oil and gas activities on air, land, water, fish and wildlife resources.

Requirement/Standard: All roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to protect subsistence use and access to subsistence hunting and fishing areas. The authorized officer will consult with the US Fish and Wildlife Service and other appropriate federal, State, and North Slope Borough regulatory and resources agencies, and the Native Village of Kaktovik and the Venetie Tribal Government prior to approving construction of roads. Subject to approval by the authorized officer and the US Fish and Wildlife Service, the construction, operation and maintenance of oil and gas field roads is the responsibility of the lessee unless the construction, operation, and maintenance of roads are assumed by the appropriate governing entity.



***E-2 Lease Stipulation***

**Objective:** ~~Protect water quality and the diversity of fish, invertebrates and wildlife populations and habitats. Protect fish bearing waterbodies, water quality, and aquatic habitats.~~

**Requirement/Standard:**

- a. Permanent oil and gas facilities, including roads, airstrips, and pipelines, are prohibited upon or within 500 feet as measured from the ordinary high watermark of fish-bearing waterbodies unless further setbacks are stipulated under Lease Stipulation K-2. Essential pipeline and road crossings will be permitted on a case-by-case basis by the authorized officer following consultation with the US Fish and Wildlife Service and other appropriate federal, State, and North Slope Borough regulatory and resources agencies, and the Native Village of Kaktovik and the Venetie Tribal Government.
- b. Exploration and Construction camps are prohibited on frozen lakes and river ice.
- c. Siting of camps on river sand and gravel bars is allowed and encouraged. Where leveling of trailers or modules is required and the surface has a vegetative mat, leveling shall be accomplished through blocking in a way that preserves the vegetative mat. ~~rather than use of a bulldozer.~~

***E-3 Lease Stipulation***

**Objective:** Maintain free passage of marine and anadromous fish and protect subsistence use and access to subsistence hunting and fishing.

**Requirement/Standard:** Causeways and docks are prohibited in river mouths or deltas. Artificial gravel islands and bottom-founded structures are prohibited in river mouths or active stream channels on river deltas. Causeways, docks, artificial islands, and bottom-founded drilling structures shall be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program, developed in consultation with appropriate federal, State, and North Slope Borough regulatory and resource agencies and the Native Village of Kaktovik, shall be required to address the objectives of water quality and free passage of fish.

***E-4 Best Management Practice***

**Objective:** Minimize the potential for pipeline leaks, the resulting environmental damage, and industrial accidents.

**Requirement/Standard:** All pipelines shall be designed, constructed, and operated under an authorized officer-approved quality assurance/quality control plan that is specific to the product transported and shall be constructed to accommodate the best available technology for detecting and preventing corrosion or mechanical defects during routine structural integrity inspections.

***E-5 Best Management Practice***

**Objective:** Minimize impacts of the development footprint.

**Requirement/Standard:** Facilities shall be designed and located to minimize the development footprint and impacts to other purposes of the Arctic National Wildlife Refuge. Issues and methods that are to be considered include: (a) use of maximum extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads; (b) sharing facilities with existing development; (c) collocation of all oil and gas facilities, except airstrips, docks, and seawater-treatment plants, with drill pads; (d) integration of airstrips with roads; (e) use of gravel- reduction technologies, e.g., insulated or pile-supported pads, (f) coordination of facilities with infrastructure in support of offshore development; (g) location of facilities and other infrastructure outside of areas identified as important for wildlife habitat, subsistence uses, recreational uses; and (h) where aircraft traffic is a concern, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations.

***E-6 Best Management Practice***

**Objective:** Reduce the potential for ice-jam flooding, damage from aufeis, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage.

**Requirement/Standard:**

- a) To allow for sheet flow and flood plain dynamics and to ensure fish passage and passage of other organisms, bridges are preferred over culverts if technically feasible. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.
- b) To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices outlined in "Fish Passage Design Guidelines" developed by the US Fish and Wildlife Service Alaska Fish Passage Program (June 29, 2018), the basis of these guidelines, "Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings" (U.S. Forest Service 2008), and other generally accepted best management procedures prescribed by the authorized officer and the US Fish and Wildlife Service.
- c) In addition to the best management practices outlined in the aforementioned documents for stream simulation design, the design engineer should ensure that crossing structures are designed for aufeis, permafrost, sheet flow, additional freeboard during breakup, and other unique conditions of the arctic environment.



***E-7 Best Management Practice***

**Objective:** Minimize disruption of caribou movement and subsistence use.

**Requirement/Standard:** Pipelines and roads shall be designed to allow the free movement of caribou and the safe, unimpeded passage of the public while participating in subsistence and recreational activities. Listed below are the accepted design practices:

- a. Above-ground pipelines shall be elevated a minimum of 7 feet as measured from the ground to the bottom of the pipeline at vertical support members.
- b. In areas where facilities or terrain may funnel caribou movement, ramps over pipelines, buried pipelines, or pipelines buried under roads may be required by the authorized officer after consultation with the US Fish and Wildlife Service, other federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), and the Native Village of Kaktovik and the Venetie Tribal Government.
- c. A minimum distance of 500 feet between pipelines and roads shall be maintained. Separating roads from pipelines may not be feasible within narrow land corridors between lakes and where pipelines and roads converge on a drill pad. Where it is not feasible to separate pipelines and roads, alternative pipeline routes, designs and possible burial within the road will be considered by the authorized officer.
- d. Above-ground pipelines shall have a non-reflective finish.

***E-8 Best Management Practice***

**Objective:** Minimize the impact of mineral materials mining activities on air, land, water, fish, and wildlife resources.

**Requirement/Standard:** Gravel mine site design, construction, and reclamation will be in accordance with a plan approved by the authorized officer. The plan shall be developed in consultation with the US Fish and Wildlife Service and other appropriate federal, State, and North Slope Borough regulatory and resource agencies and consider:

- a. Construction of gravel mine sites or water reservoirs may not be considered within the active floodplains of the four rivers that support populations of freshwater, anadromous, or endemic fish (Canning, Sadlerochit, Hulahula, and Aichilik rivers).
- b. Design and construction of gravel mine sites may be considered at locations outside the active floodplain.
- c. Design and construction of gravel mine sites that may also serve as water reservoirs may be considered within active floodplains with the exception of waters identified in (a).
- d. Potential storage and reuse of sod/overburden for the mine site or at other disturbed sites on the North Slope.
- e. All constructed water storage reservoirs shall be a sufficient distance from drill sites, fueling stations, or other temporary or permanent site that generates or maintains more than 220 gallons of fuel, drilling fluids, or other hazardous materials to avoid contamination via surface or groundwater of the storage reservoir. The lessee shall implement a water quality and contaminants monitoring program for any constructed water storage facility.

***E-9 Best Management Practice***

**Objective:** Avoidance of human-caused increases in populations of predators of ground-nesting birds.

**Requirement/Standard:**

- a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the authorized officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites.
- b. Feeding of wildlife and allowing wildlife to access human food or putrescible waste, is prohibited and will be subject to non-compliance



regulations.

#### ***E-10 Best Management Practice***

**Objective:** Reduction of risk of collisions between migrating birds and oil and gas and related facilities during low light conditions. ~~Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.~~

**Requirement/Standard:** Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.

#### ***E-11 Best Management Practice: Arctic Refuge does not contain significant numbers of TES bird species at this time, revise to reflect more general protections for future listings or abundance?***

**Objective:** Minimize the take of bird species, particularly those listed under the Endangered Species Act and BLM Special Status Species from direct or indirect interaction with oil and gas facilities.

**Requirement/Standard:** In accordance with the guidance below, before the approval of facility construction, aerial surveys of the following species shall be conducted within any area proposed for development.

##### *Special Conditions in Spectacled and/or Steller's Eiders Habitats:*

- a. Surveys shall be conducted by the lessee for at least 3 years before authorization of construction, if such construction is within the USFWS North Slope eider survey area and at least 1 year outside that area. Results of aerial surveys and habitat mapping may require additional ground nest surveys. Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol. Information gained from these surveys shall be used to make infrastructure siting decisions as discussed in subparagraph b, below.
- b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall work with the USFWS and BLM early in the design process to site roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, location of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and management of high noise levels.
- c. To reduce the possibility of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only, other birds) colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized:
  1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;
  2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or
  3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.
- d. To reduce the likelihood of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only,



other birds) colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS. Spectacled and/or Steller's eider surveys shall be conducted following accepted BLM-protocol. Information gained from these surveys shall be used to make infrastructure siting decisions as discussed in subparagraph b, below. b. If spectacled and/or Steller's eiders are determined to be present within the proposed development area, the applicant shall work with the USFWS and BLM early in the design process to site roads and facilities in order to minimize impacts to nesting and brood-rearing eiders and their preferred habitats. Such consultation shall address timing restrictions and other temporary mitigating measures, location of permanent facilities, placement of fill, alteration of eider habitat, aircraft operations, and management of high noise levels. c. To reduce the possibility of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only, other birds) colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases which are to be few in number and limited in extent. Exceptions are limited to the following situations, and must be reported to the USFWS when exceptions are authorized: 1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad; 2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or 3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods. d. To reduce the likelihood of spectacled and/or Steller's eiders (and, under Alternatives B-1, B-2, and C only, other birds) colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the USFWS.

*Special Conditions in Yellow-billed Loon Habitats:* a. Aerial surveys shall be conducted by the lessee for at least 3 years before authorization of construction of facilities proposed for development which are within 1 mile of a lake 25 acres or larger in size. These surveys along shorelines of large lakes shall be conducted following accepted BLM protocol during nesting in late June and during brood rearing in late August. b. Should yellow-billed loons be present, the design and location of facilities must be such that disturbance is minimized. The default standard mitigation is a 1-mile buffer around all recorded nest sites and a minimum 1,625-foot (500-meter) buffer around the remainder of the shoreline. Development will generally be prohibited within buffers unless no other option exists.

#### *Protections for Birds*

a. To reduce the possibility of birds colliding with above-ground utility lines (power and communication), such lines shall either be buried in access roads or suspended on vertical support members except in rare cases, which are to be few in number and limited in extent. Exceptions are limited to the following situations:

1. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad;
2. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a vertical support member; or
3. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods.



b. To reduce the likelihood of birds colliding with communication towers, towers should be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures, and on the east or west side of buildings or other structures if possible. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds. Such markings shall be developed through consultation with the US Fish and Wildlife Service.

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***E-12 Best Management Practice***

Objective: Use ecological mapping as a tool to assess wildlife habitat before development of permanent facilities, to conserve important habitat types during development.

Requirement/Standard: An ecological land classification map of the development area shall be developed before approval of facility construction. The map will integrate geomorphology, surface form, and vegetation at a scale, level of resolution, and level of positional accuracy adequate for detailed analysis of development alternatives. The map shall be prepared in time to plan one season of ground-based wildlife surveys, if deemed necessary by the authorized officer after consultation with the US Fish and Wildlife Service, before approval of the exact facility location and facility construction.

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***E-13 Best Management Practice***

Objective: Protect cultural and paleontological resources.

Requirement/Standard: Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity, based on a study design approved by the authorized officer after consultation with the US Fish and Wildlife Service and other appropriate federal, State, North Slope Borough agencies, and the Native Village of Kaktovik. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the authorized officer and the US Fish and Wildlife Service, and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer.

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*See E-6 which includes fish passage*

***E-14 Best Management Practice***  
Objective: Ensure the passage of fish at stream crossings.  
Requirement/Standard: To ensure that crossings provide for fish passage, all proposed crossing designs shall adhere to the best management practices outlined in “Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain” by McDonald et al. (1994), “Fundamentals of Culvert Design for Passage of Weak Swimming Fish” by Behlke et al. (1991), and other generally accepted best management procedures prescribed by the authorized officer. To adhere to these best management practices, at least 3 years of hydrologic and fish data shall be collected by the lessee for any proposed crossing of a stream whose structure is designed to occur, wholly or partially, below the stream’s ordinary high watermark. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream. *(Text is same as in Northeast NPR A 2008 Record of Decision)*

***E-15 Best Management Practice***

Objective: Prevent or minimize the loss of nesting habitat for cliff nesting raptors.

Requirement/Standard:

- a. Removal of greater than 100 cubic yards of bedrock outcrops, sand, and/or gravel from cliffs shall be prohibited.
- b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.

***E-16 Best Management Practice***

Objective: Prevent or minimize the loss of raptors due to electrocution by powerlines.

Requirement/Standard: Comply with the most up-to-date industry-accepted suggested practices for raptor protection on powerlines. Current accepted standards were published in “Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006” in 2006 by the Avian Power Line Interaction Committee and are updated as needed.

***E-18 Best Management Practice***

Objective: Avoid and reduce temporary impacts to productivity from disturbance near Steller’s and/or spectacled eider nests.

Requirement/Standard: Ground-level activity (by vehicle or on foot) within 200 meters of occupied Steller’s and/or spectacled eider nests, from June 1 through August 15, will be restricted to existing thoroughfares, such as pads and roads. Construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels within 200 meters of occupied Steller’s and/or spectacled eider nests will be prohibited. In instances where summer (June 1 through August 15) support/construction activity must occur off existing thoroughfares, USFWS-approved nest surveys must be conducted during mid-June prior to the approval of the activity. Collected data will be used to evaluate whether the action could occur based on employment of a 200-meter buffer around nests or if the activity would be delayed until after mid-August once ducklings are mobile and have left the nest site. The BLM will also work with the USFWS to schedule oil spill response training in riverine, marine, and inter-tidal areas that occurs within 200 meters of shore outside sensitive nesting/brood-rearing periods or conduct nest surveys. The protocol and timing of nest surveys for Steller’s and/or spectacled eiders will be determined in cooperation with the USFWS, and must be



approved by the USFWS. Surveys should be supervised by biologists who have previous experience with Steller's and/or spectacled eider nest surveys.

#### ***E-19 Best Management Practice***

**Objective:** Provide information to be used in monitoring and assessing wildlife movements during and after construction.

**Requirement/Standard:** A representation, in the form of ArcGIS-compatible shape-files, of all new infrastructure construction shall be provided to the authorized officer and the US Fish and Wildlife Service. During the planning and permitting phase, shape-files representing proposed locations shall be provided. Within 6 months of construction completion, shape-files (within GPS accuracy) of all new infrastructure shall be provided. Infrastructure includes all gravel roads and pads, facilities built on pads, pipelines and independently constructed powerlines (as opposed to those incorporated in pipeline design). Gravel pads shall be included as polygon feature. Roads, pipelines, and powerlines may be represented as line features but must include ancillary data to denote width, number pipes, etc. Poles for power lines may be represented as point features.

Ancillary data shall include construction beginning and ending dates.

#### ***E-20 Best Management Practice***

**Objective:** Maintain visual component of wilderness characteristics within river/recreation buffers in their current condition by preserving scenic diversity of view and special features in a setting characterized by natural, undeveloped scenery and conditions.

~~Manage permitted activities to meet Visual Resource Management class objectives described below.~~

**Requirement/Standard:** Buffers for no surface occupancy for coastal lagoons between the Kongakut River mouth to and including Kaktovik Lagoon (Stipulation K-X); for no surface occupancy along the Hulahula River and Canning Rivers within the coastal plain (Stipulation K-X); and limit development of new infrastructure located outside of, but visible from within, these buffers. For limited development of new infrastructure located outside of, but visible from within, these buffers, use best practices for designing and maintaining necessary infrastructure possibly visible from within buffers by adopting existing best practices in visual resource impact mitigation and innovating new methods to strive for no visual impact from within the buffers, including but not limited to: modeling visibility of infrastructure as seen from within the buffer during planning and development to locate and cap the height of temporary and permanent structures; identifying and locating the minimum number of roads, drill pads, pipelines, production facilities, etc.; and timing gas flare events to coincide with lower visitation times. Additionally, for limited development of new infrastructure located outside of, but visible from within, these buffers, manage permitted activities to meet Visual Resource Management class objectives described below. At the time of application for construction of permanent facilities, the lessee/permittee shall, after consultation with the authorized officer and the US Fish and Wildlife Service, submit a plan to best minimize visual impacts, consistent with the Visual Resource Management class for the lands on which facilities would be located. A photo simulation of the proposed facilities is a necessary element of the plan. **Would need to include VRM map in EIS.**

**Class I:** Natural ecological changes and very limited management activity are allowed. The level of change to the characteristic landscape should be very low and must not attract attention.

**Class II:** The level of change to the characteristic landscape should be low. Management activities may be seen, but should not dominate the view of the casual observer. Any changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.



**Class III:** The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

**Class IV:** The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize impacts through location and design by repeating form, line, color, and texture.

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***E-21 Best Management Practices***

Objective: Maintain surface water hydrology across the landscape to ensure vegetative communities are protected.

Requirement/Standard: Permanent infrastructure, including roads, airstrips, pads, etc. should be designed and built to minimize the disturbance to surface water hydrology (i.e. sheetflow), minimize ponding and drying, protect the landscape from erosion and decreasing slope stability, and infrastructure washout.

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***E-22 Best Management Practice***

Objective: Maintain soundscape component of wilderness characteristics within river/recreation buffers in their current condition by preserving a setting characterized by natural quiet and natural sounds.

Requirement/Standard: No surface occupancy allowed for coastal lagoons between the Kongakut River mouth to and including Kaktovik Lagoon; and along the Hulahula River and Canning Rivers; and limit occupation/infrastructure located outside of, but audible from within, these buffers to reduce noise potential. Use best practices for noise impact mitigation and innovate new methods to prevent to the extent practicable noise impacts within the buffers, including but not limited to: placing production facilities and aircraft landing areas outside sound range of the recreation buffer; and adopting/innovating construction methods that dampen sound transmission at any sites where sound is generated (such as at landing areas, production facilities, etc.).

At the time of application for activities located outside of but audible from within said buffers, the lessee/permittee shall, after consultation with the authorized officer and the US Fish and Wildlife Service, submit a plan to best minimize noise impacts to recreation by attempting to maintain natural quiet and natural sounds. Development and implementation of baseline data collection protocols about current soundscape conditions and monitoring of noise impacts during activity will be a necessary element of the plan.

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**USE OF AIRCRAFT FOR PERMITTED ACTIVITIES**



***F-1 Best Management Practice***

**Objective:** Minimize the effects of low-flying aircraft on wildlife, subsistence activities, local communities and recreational users of the area, including sport hunters and fishers.

**Requirement/Standard:** The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (**Note:** This best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.):

- a. Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within 0.5 mile of cliffs identified as raptor nesting sites from April 15 through August 15 and within 0.5 mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.
- b. Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the authorized officer, in consultation with the US Fish and Wildlife Service, Alaska Department of Fish and Game, and other relevant agencies and observers.
- c. Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, local communities and recreational users, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Proposed aircraft use plans should be reviewed by the US Fish and Wildlife Service and other appropriate federal, State, and borough agencies as well as the Native Village of Kaktovik and the Venetie Tribal Government. Consultations with these same agencies and governments will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the authorized officer if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered to allow larger aircraft to be employed, resulting in fewer flights to the facility.
- d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods as identified by the residents of Kaktovik (~~spring goose hunting and fall caribou and moose hunting~~) should be kept to a minimum.
- e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Porcupine Caribou Calving Area and Post-Calving Area from May 20 through July 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees over any identified Goose Molting Areas should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.
- ~~f. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Utukok River Uplands Special Area from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. (Note: The boundary of the Utukok River Uplands Special Area differs among Alternatives B-1 through D. See Maps 2-2, 2-3, and 2-4.)~~
- g. Hazing of wildlife by aircraft is prohibited. Pursuit of running wildlife is hazing. If wildlife begins to run as an aircraft approaches, the aircraft is too close and must break away.
- ~~h.) Fixed wing aircraft used as part of a BLM authorized activity along the coast shall maintain minimum altitude of 2,000 feet and a 0.5 mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices. Helicopters used as part of a BLM-~~



~~authorized activity along the coast shall maintain minimum altitude of 3,000 feet and a 1 mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices.~~

i. Aircraft used as part of a BLM-authorized activity along the coast and shore fast ice zone shall maintain minimum altitude of 3,000 feet and a buffer of 1 mile from aggregations of seals, unless doing so would endanger human life or violate safe flying practices.

j. Aircraft shall maintain an altitude of at least 1,500 feet above ground level when within 0.5 mile of polar bears observed on land, ice, or in the water, unless doing so would endanger human life or violate safe flying practices. At all times, aircraft shall maintain the maximum distance and altitude possible from concentrations of polar bears, particularly at the whale “bone pile” on Barter Island, and should take precautions to avoid flying lower than 1,500 feet above ground level directly over or within 0.5 mile of these areas, unless doing so would endanger human life or violate safe flying practices.

## OIL AND GAS FIELD ABANDONMENT

Alternative B-1	Alternative B-2 Preferred Alternative	Alternative C
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### *G-1 Lease Stipulation*

Objective: Ensure ongoing and long-term reclamation of land to its previous condition and use.

Requirement/Standard:

a. Oil and gas infrastructure, including gravel pads, roads, airstrips, wells and production facilities, will be removed and the land reclaimed on an ongoing basis, as extraction is complete.

b. Prior to final abandonment, land used for oil and gas infrastructure—including but not limited to well pads, production facilities, access roads, and airstrips—shall be reclaimed to ensure eventual restoration of ecosystem function and meet minimal standards for eligibility of Wilderness designation. The leaseholder shall develop and implement an abandonment and reclamation plan approved by the BLM. The plan shall describe short-term stability, visual, hydrological, and productivity objectives and steps to be taken to ensure eventual ecosystem restoration to the land’s previous hydrological, vegetative, and habitat condition, and Wilderness eligibility. The BLM may grant exceptions to satisfy stated environmental or public purposes.

## SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES



***H-1 Best Management Practice***

**Objective:** Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and other activities.

**Requirement/Standard:** Lessee/permittee shall consult directly with affected communities using the following guidelines:

- a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, including the Native Village of Kaktovik and Venetie Tribal Government, the North Slope Borough, and the Arctic National Wildlife Refuge Subsistence Advisory Panel to discuss the siting, timing and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes.
- b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to the Arctic National Wildlife Refuge Subsistence Advisory Panel, the Native Village of Kaktovik and the Venetie Tribal Government, and the North Slope Subsistence Regional Advisory Council for review and comment. The applicant must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it.
- c. A plan shall be developed that shows how the activity, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan will also describe the methods used to monitor the effects of the activity on subsistence use. The plan shall be submitted to the BLM and US Fish and Wildlife Service as part of the plan of operations. The plan should address the following items:
  1. A detailed description of the activity(ies) to take place (including the use of aircraft).
  2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the authorized officer during the consultation process.
  3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community.
  4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.
  5. Procedures necessary to facilitate access by subsistence users to conduct their activities.
  6. Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts on the availability of marine mammals to subsistence hunters.
  - 7.) All vessels over 50 ft. in length engaged in operations requiring a BLM permit must have an Automatic Identification System (AIS) transponder system on the vessel.
- d. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the authorized officer, the US Fish and Wildlife Service and Arctic National Wildlife Refuge Subsistence Advisory Panel.
- e. Permittees that propose barging facilities, equipment, supplies, or other materials to the Arctic National Wildlife Refuge in support of oil and



gas activities in the shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.

### ***H-2 Best Management Practice***

**Objective:** Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.

**Requirement/Standard:** The authorized officer will consult with appropriate federal, State, North Slope Borough agencies, Native Village of Kaktovik and the Venetie Tribal Government prior to approving the study/studies design. In addition to the consultation process described in Best Management Practice H-1 for permitted activities, before activity to conduct geophysical (seismic) exploration commences, applicants shall notify the local search and rescue organizations of proposed seismic survey locations for that operational season. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite used for subsistence purposes and located within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.

- a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will notify all potentially affected subsistence-use cabin and campsite users.
- b. The official recognized list of subsistence-use cabin and campsite users is the North Slope Borough's most current inventory of cabins and campsites, which have been identified by the subsistence users' names.
- c. A copy of the notification letter, a map of the proposed exploration area, and the list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.
- d. The authorized officer will prohibit seismic work within 1 mile of any known subsistence-use cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the authorized officer. (Regardless of the consultation outcome, the authorized officer will prohibit seismic work within 300 feet of a known subsistence-use cabin or campsite.)
- e. The permittee shall notify the appropriate local search and rescue (e.g., Nuiqsut Search and Rescue, Atqasuk Search and Rescue) of their current operational location within the Arctic National Wildlife Refuge on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips and access routes accordingly. Identification of the appropriate search and rescue offices to be contacted can be obtained from the coordinator of the Arctic National Wildlife Refuge Subsistence Advisory Panel in the BLM's Arctic Field Office.



***H-3 Best Management Practice***

**Objective:** Minimize impacts to sport hunting and trapping species and to subsistence harvest of those animals.

**Requirement/Standard:** Hunting and trapping by lessee's/permittee's employees, agents, and contractors are prohibited when persons are on "work status." Work status is defined as the period during which an individual is under the control and supervision of an employer. Work status is terminated when the individual's shift ends and he/she returns to a public airport or community (e.g., Kaktovik, Utqiagvik, Deadhorse). Use of lessee/permittee facilities, equipment, or transport for personnel access or aid in hunting and trapping is prohibited.

***I-1 Best Management Practice***

**Objective:** Minimize cultural and resource conflicts.

**Requirement/Standard:** All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, best management practices, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. The proposed orientation program shall be submitted to the authorized officer and the Native Village of Kaktovik for review and approval and should:

- a. provide sufficient detail to notify personnel of applicable stipulations and best management practices as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.
- b. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, migratory birds and marine mammals, and provide guidance on how to avoid disturbance.
- c. Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.
- d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.
- e. Include information concerning avoidance of conflicts with subsistence hunting and fishing, commercial fishing activities, and pertinent mitigation.
- f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft such as caribou calving and hunting and fishing along the coastal shorelines and lagoon waters. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near Kaktovik's barrier islands and coastal lagoon waters.
- g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.
- h. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.
- i. Include a module discussing bear interaction plans to minimize conflicts between polar bears, grizzly bears and humans.
- j. Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to on-site personnel.
- k. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the North Slope Borough Health Department for review and comment.
- l. Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the North Slope Borough Health Department for review and comment.



**ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION PROCESS**

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***J.***

The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or to have some other special status. The authorized officer, in consultation with the US Fish and Wildlife Service, ~~BLM~~ may require modifications to exploration and development proposals to further its conservation and management objective to avoid ~~BLM~~-approved activities that will contribute to the need to list such a species or their habitat. The authorized officer, in consultation with the US Fish and Wildlife Service, may require modifications to or disapprove a proposed activity that is likely to adversely affect a proposed or listed endangered species, threatened species, or critical habitat. The authorized officer will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation.

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## ADDITIONAL PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS

### *K-1a Lease Stipulation/Best Management Practice – Rivers*

**Objective:** Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts to subsistence cabin and campsites; the disruption of subsistence activities; impacts to wilderness hunting and recreation activities; and impacts to scenic and other resource values.

**Requirement/Standard:** Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and within the described setback distances outlined below from the southern boundary of the 1002 Area to the stream mouth. For streams located entirely within the 1002 Area, the setback extends to the head of the stream as identified in the National Hydrography Dataset. Floodplain gravel mines designed to become water reservoirs will be considered on a case-by-case basis consistent with Best Management Practice E-8. On a case-by-case basis, and in consultation with the US Fish and Wildlife Service, other federal, State, and North Slope Borough regulatory and resource agencies (as appropriate, based on agency legal authority and jurisdictional responsibility), essential pipeline and road crossings to the main channel will be permitted through setback areas. The above setbacks may not be practical within river deltas. In these situations, permanent facilities shall be designed to withstand a 200-year flood event.

- a. Canning River setback will extend from the western boundary of the 1002 Area to 3 miles east of the eastern edge of the active flood plain. Additional protective measures for the Canning River Delta and Lakes are detailed in Stipulation K-1b.
- b. Hulahula River setback will be 4 miles in all directions from the active flood plain. Additional protective measures around the perennial spring at Fish Hole 1 and aufeis are detailed in Stipulation K-1c.
- c. Aichilak River setback will extend 3 miles from the eastern edge of the coastal plain boundary along the Aichilak River.
- d. Sadlerochit River setback will have a 1.0 mile setback from the banks' ordinary high water mark. Additional protective measures around the perennial spring and aufeis are detailed in Stipulation K-1c.
- e. Tamayariak River will have a 0.5 mi setback from the banks' ordinary high water mark. Additional protective measures around the perennial spring and aufeis are detailed in Stipulation K-1c.
- f. Katakturuk River will have a 0.5 mi setback from the banks' ordinary high water mark.
- g. Nularvik River will have a 0.5 mi setback from the banks' ordinary high water mark.
- h. Okpilak River will have a 1.0 /4.0 mi setback from the banks' ordinary high water mark.**
- i. Jago River will have a 1.0 mi setback from the banks' ordinary high water mark. Additional protective measures around the perennial spring and aufeis are detailed in Stipulation K-1c.
- j. Okerokovik River will have a 0.5 mi setback from the banks' ordinary high water mark.
- k. Niguanak River will have a 0.5 mi setback from the banks' ordinary high water mark.
- l. Sikrelurak River will have a 0.5 mi setback from the banks' ordinary high water mark.
- m. Angunwill river have a 0.5 mi setback from the banks' ordinary high water mark
- .n. Kogotpak river will have a 0.5 mi setback from the banks' ordinary high water mark.
- o. Marsh Creek will have a 0.5 mi setback from the banks' ordinary high water mark.
- p. Carter Creek will have a 0.5 mi setback from the banks' ordinary high water mark.
- q. Itkilyariak Creek will have a 0.5 mi setback from the banks' ordinary high water mark.



***K-1b Stipulation – Canning River Delta and Lakes***

Objective: Protect and minimize adverse effects to the water quality, quantity and diversity of fish and wildlife habitats and populations, subsistence resources, cultural resources and protect and minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas; the loss of passage, spawning, rearing or over-wintering habitat for fish; the loss of cultural and paleontological resources; the loss of migratory bird habitat;

Requirement/Standard: Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited within 0.5 mile of the ordinary high watermark of the ordinary high watermark of any waterbody within Townships 8 and 9 north of the Canning and Tamyariak watersheds. On a case-by-case basis in consultation with the USFWS and other federal, State and North Slope Borough regulatory and resource agencies (as appropriate based on agency legal authority and jurisdictional responsibility), essential pipeline(s), road crossings, and other permanent facilities may be considered through the permitting process in these areas where the lessee can demonstrate on a site-specific basis that impacts will be minimal.



***K-1c Lease Stipulation/Best Management Practice – Springs/Aufeis***

Objective: Protect the water quality, quantity and diversity of fish and wildlife habitats and populations associated with springs and aufeis across the coastal plain. River systems with springs provide year round habitat and host the most diverse and largest populations of fish, aquatic invertebrates, and wildlife and are associated with major subsistence activity and cultural resources. Aufeis is a unique feature associated with perennial springs and helps sustain river flow during summer and provides insect relief for caribou. Because the subsurface flow paths to perennial springs are unknown and could potentially be disturbed by drilling or fracking activity, we recommend buffer areas around the major perennial springs that support fish populations in which no leasing is permitted.

**Requirement/Standard:**

- a. Prior to drilling activities, lessee shall conduct studies in areas containing springs to ensure subsequent drilling activities will not disrupt flow of the perennial springs, unless such studies have already been completed. Study plans will be developed in consultation with the BLM and US Fish and Wildlife Service and other parties as appropriate.
- b. No leasing and no new non-subsistence infrastructure will be permitted within 3 miles adjacent to or above Sadlerochit Spring (04N031E) nor within a 1 mile buffer below the spring to where it enters the Saddlerochit river and along the aufeis formation (04N031E & 05N031E). This spring supports an isolated, dwarf population of Dolly Varden, unique plant and invertebrate communities, and an extensive aufeis field that persists through much of the summer providing insect relief habitat for caribou.
- c. No leasing will be permitted within 3 miles adjacent to or above the perennial spring at Fish Hole 1 on the Hulahula River (05N032E). Further, no new non-subsistence infrastructure within 4 miles of the perennial spring at Fish Hole 1 on the Hulahula River (05N032E) nor within 1 mile of the aufeis field (05N032E & 06N032E). The Fish Hole 1 spring provides overwintering habitat for Arctic grayling and a large population of anadromous Dolly Varden. Residents of Kaktovik routinely harvest Dolly Varden in Fish Hole 1 during winter. The spring produces an extensive aufeis field that persists through much of the summer.
- d. No leasing will be permitted within 3 miles adjacent to or above the perennial Tamayariak Spring, and no new non-subsistence infrastructure will be permitted within 1 mile of the associated aufeis field (07N026E).
- e. No leasing will be permitted within 3 miles adjacent to or above the perennial Okerokavik Spring (04N036E), and no new non-subsistence infrastructure will be permitted within 1 mile of the associated aufeis field in the Jago River drainage (05N035E & 05N036E).
- f. The Canning River is the largest river crossing the 1002 Area and has several perennial springs originating upstream from the 1002 Area that provide steady flow under ice across the coastal plain. The river supports several fish species including Arctic grayling and a large population of anadromous Dolly Varden. Aufeis fills the river corridor across the coastal plain and extends well into the delta, providing insect relief to Caribou during the early summer. No surface occupancy within 3 miles of the eastern bank of the Canning River including through the delta.



***K-2 Lease Stipulation/Best Management Practice – Nearshore marine, lagoon and barrier island habitats of the Southern Beaufort Sea within the boundary of the Arctic Refuge***

**Objective:** Protect fish and wildlife habitat (including, but not limited to, that for waterfowl and shorebirds, caribou insect-relief, marine mammals, and polar bear summer and winter coastal habitat), preserve air and water quality, and minimize impacts to subsistence activities and historic travel routes on the major coastal waterbodies.

**Requirement/Standard**

**(Exploration):** Oil and gas exploration operations (e.g., drilling, seismic exploration, and testing) are not allowed on the major coastal waterbodies and coastal islands between May 15 and until the later of November 1 or sea ice is within 10 miles of the coast of each season, whichever is later. Requests for approval of any activities must be submitted in advance and must be accompanied by evidence and documentation that demonstrates to the satisfaction of the authorized officer and the US Fish and Wildlife Service that the actions or activities meet all of the following criteria:

- a. Exploration activities will not unreasonably conflict with subsistence uses or significantly impact seasonally concentrated fish and wildlife resources.
- b. There is adequate spill response capability to effectively respond during periods of broken ice and/or open water, or the availability of alternative methods to prevent well blowouts or pipeline leaks during periods when adequate response capability cannot be demonstrated. Such alternative methods may include improvements in blowout prevention technology, equipment and/or changes in operational procedures and “top-setting” of hydrocarbon-bearing zones.
- c. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic will be conducted to minimize additional impacts or further compounding of “direct spill” related impacts on area resources and subsistence uses.
- d. The location of exploration and related activities shall be sited so as to not pose a hazard to navigation by the public using high-use subsistence-related travel routes into and through the major coastal waterbodies, as identified by the North Slope Borough, recognizing that marine and nearshore travel routes change over time, subject to shifting environmental conditions.

**(Development):** With the exception of linear features such as pipelines, no permanent oil and gas facilities are permitted on barrier islands or under the water within 1 mile seaward of the shoreline (as measured from mean high tide) of the major coastal lagoons or the natural barrier islands, unless they can meet all the following criteria:

- a. Design and construction of facilities shall minimize impacts to subsistence uses, travel corridors, seasonally concentrated fish and wildlife resources.
- b. Daily operational activities, including use of support vehicles, watercraft, and aircraft traffic, alone or in combination with other past, present, and reasonably foreseeable activities, shall be conducted to minimize impacts to subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources.
- c. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, bridges or causeways, shall be sited and constructed so as to not pose a hazard to navigation by the public using traditional high-use subsistence-related travel routes into and through the major coastal lagoons and bays as identified by the community of Kaktovik and the North Slope Borough.
- d. Demonstrated year-round oil spill response capability, including the capability of adequate response during periods of broken ice or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include seasonal drilling restrictions, improvements in blowout prevention technology, equipment and/or changes in operational procedures, and “top-setting” of hydrocarbon-bearing zones.

e. Reasonable efforts will be made to avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic that add to impacts or further compound “direct spill” related impacts on area resources and subsistence uses.f. Before conducting open water activities, the lessee shall consult with the community of Kaktovik, the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.



***K-1c Lease Stipulation – Coastal Polar Bear Denning Critical Habitat***

**Objective:** Minimize disturbance to denning polar bears, and disturbance or alteration of key river and creek maternal denning habitat areas.

**Standard:**

- a. From the coastline to 5 miles inland, no permanent oil and gas infrastructure shall be located within 1-mile of potential polar bear denning habitat on the Niguanak River, Katakturuk Creek, Nularvik Creek, Marsh Creek, Carter Creek, and Itkilyariak Creek unless alternative protective measures are approved by the authorized officer in consultation with the U.S. Fish and Wildlife Service.
- b. From the coastline to 5 miles inland, between October 30 and April 15 of any year, operators shall not conduct oil and gas activities within 1-mile of potential polar bear denning habitat on the Niguanak River, Katakturuk Creek, Nularvik Creek, Marsh Creek, Carter Creek, and Itkilyariak Creek unless alternative protective measures are approved by the authorized officer in consultation with the U.S. Fish and Wildlife Service.

***K-2 Best Management Practice – Migratory waterfowl nesting and molting habitat***

**Objective:** Minimize the loss or alteration of habitat for, or disturbance of, nesting and brood rearing for large congregations of migratory waterfowl.

**Requirement/Standard:**

- a. Aerial surveys for nesting colonies and brood-rearing areas for migratory waterfowl shall be conducted for a minimum of 2 years before authorization of construction of permanent facilities. At a minimum, the survey area shall include the proposed development site(s) (i.e., the footprint) and the surrounding 0.5-mile area. These surveys shall be conducted following accepted BLM and US Fish and Wildlife Service protocols.
- b. Development may be prohibited or activities curtailed within 0.5 mile of all identified brant nesting colonies and brood-rearing areas identified during the 2-year survey.

***K-5a Lease Stipulation/Best Management Practice –Caribou Summer Habitat***

**Note:** All lands within the Arctic Refuge Coastal Plain are recognized as habitat of the Porcupine and Central Arctic caribou herds and shall be managed to ensure unhindered movement of caribou through the area.

**Objective:** Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions the Coastal Plain that are essential for summer use by caribou, including calving and rearing, insect-relief, and migration.

**Requirement/Standard:** The following standards will be applied to permitted activities:

- a. Lessees shall orient infrastructure when laying out oil and gas field developments to avoid impeding caribou migration and to avoid corralling effects.
- b. Before authorization of construction of permanent facilities (limited as they may be by restricted surface occupancy areas established in other lease stipulations), the lessee shall design and implement and report a study of caribou movement unless an acceptable study(s) specific to the Porcupine and Central Arctic Caribou herds has been completed within the last 10 years.
- c. Heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended from no later than May 20 through no earlier than July 20, unless approved by the authorized officer in consultation with the appropriate federal, State, and North Slope Borough regulatory and resource agencies. The intent of this requirement and allowance for deviation is to restrict activities that will disturb caribou during calving and insect-relief periods, but allow for activity if caribou are unlikely to be disturbed in significant numbers. If caribou arrive on the calving grounds prior to May 20 or if they remain in the area in significant numbers (greater than approximately 10% of the estimated calving cow population or 1,000 during insect-relief periods) past July 20, major construction activities will be suspended. The lessee shall submit with the development proposal a “stop work” plan that considers this and any other mitigation related to caribou early arrival



and/or late departure. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region.

d. The following ground and air traffic restrictions shall apply in the areas and time periods indicated. Ground traffic restrictions apply to permanent oil and gas-related roads:

1. From May 20 through July 20, traffic speed shall not exceed 15 miles per hour when caribou are within 0.5 mile of the road. Additional strategies may include limiting trips, using convoys, using different vehicle types, etc., to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The vehicle use plan shall also include a vehicle-use monitoring plan.

Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.

2. The lessee or a contractor shall observe caribou movement from May 20 through July 20, or earlier if caribou are present prior to May 20. Based on these observations, traffic will be stopped:

a. Temporarily to allow a crossing by 10 or more caribou. Sections of road will be evacuated whenever an attempted crossing by a large number of caribou (group of approximately 100 or more) appears to be imminent. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation.

b. by direction of the authorized officer throughout a defined area for up to four weeks to prevent displacement of calving caribou. The vehicle use plan shall also include a vehicle-use monitoring plan. Adjustments will be required by the authorized officer if resulting disturbance is determined to be unacceptable.

3. Major equipment, materials, and supplies to be used at oil and gas work sites shall be stockpiled prior to or after the period of May 20 through July 20 to minimize road traffic during that period.

4. Aircraft use shall be restricted in areas where caribou are present from May 20 through July 20 unless doing so endangers human life or violates safe flying practices. The lessee shall submit with the development proposal an aircraft use plan that considers these and other mitigation. The aircraft use plan shall also include an aircraft monitoring plan. Adjustments, including perhaps suspension of all aircraft use, will be required by the authorized officer if resulting disturbance is determined to be unacceptable. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.

5. Aircraft shall maintain a minimum height of 1,000 feet above ground level (except for takeoffs and landings) from May 20 through July 20, unless doing so endangers human life or violates safe flying practices. This lease stipulation is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and best management practices. However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data.



***K-5b Best Management Practice – Porcupine Caribou Herd Calving Area***

**Objective:** Minimize disturbance and hindrance of caribou, or alteration of caribou movements in the south/southeast portion of the Coastal Plain that has been identified as important caribou habitat during calving, post-calving, and insect relief periods.

**Requirement/Standard:** The Porcupine Caribou primary calving area is defined as the area with higher-than-average density of parturient caribou cows during more than 40% of years. This area is not available for leasing and no surface occupancy is permitted. This area includes approximately 653,000 acres, consisting of the entire area of the following townships, excluding areas that are within the Mollie Beattie Wilderness Area:

T03N, Ranges 34E-38E

T04N, Ranges 31E-39E

T05N, Ranges 32E-40E

T06N, Ranges 32E-40E

Peripheral calving areas include townships that partly overlap the calving area defined above. Portions of these townships may be offered for lease but no surface occupancy will be permitted:

Southern one-half of T07N, Ranges 3E-35E and Ranges 37E-38E

***K-5c Lease Stipulation – Porcupine Caribou Post-Calving Habitat Area (and Central Arctic Caribou Calving)***

**Objective:** To protect high use habitat for caribou during calving, post-calving, and insect relief periods.

**Requirement Standard:** No Central Processing Facilities shall be allowed in the Porcupine Caribou Post-Calving Habitat area. Well pads, roads, airstrips and pipelines will be permitted in accordance with the Caribou **K-5a Lease Stipulation/Best Management Practice –Caribou Summer Habitat**.

Infrastructure will be limited across the area to 10% of the entire area.

This area includes the following townships:

T05N, Ranges 27E-30E

T06N, Ranges 27E-31E

The southern one-half of T07, Ranges 27E-30E

***K-6 Lease Stipulation – Coastal Area***

**Objective:** Protect coastal waters, lagoons, barrier islands, shorelines (Coastal Area), and their value as fish and wildlife habitat (including, but not limited to, that for waterfowl, shorebirds, and marine mammals), minimize hindrance or alteration of caribou movement within caribou coastal insect-relief areas; minimize hindrance or alteration of polar bear utilization and movement in Coastal Area habitats; protect and minimize disturbance from oil and gas activities to Coastal Area habitats for polar bears and seals; prevent loss and alteration of important Coastal Area bird habitat; and prevent impacts to Coastal Area subsistence resources and activities.

**Requirement/Standard:**

a. Oil and gas operations are not allowed on the major coastal waterbodies and coastal islands between May 15 and until the later of November 1 or sea ice is within 10 miles of the coast of each season, whichever is later. Requests for approval of any activities must be submitted in advance and must be accompanied by evidence and documentation that demonstrates to the satisfaction of the authorized officer and the US Fish and Wildlife Service that the actions or activities meet all of the following criteria:



1. Exploration activities will not unreasonably conflict with subsistence uses or significantly impact seasonally concentrated fish and wildlife resources.
  2. There is adequate spill response capability to effectively respond during periods of broken ice and/or open water, or the availability of alternative methods to prevent well blowouts or pipeline leaks during periods when adequate response capability cannot be demonstrated. Such alternative methods may include improvements in blowout prevention technology, equipment and/or changes in operational procedures and “top-setting” of hydrocarbon-bearing zones.
  3. Avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic will be conducted to minimize additional impacts or further compounding of “direct spill” related impacts on area resources and subsistence uses.
  4. The location of exploration and related activities shall be sited so as to not pose a hazard to navigation by the public using high-use subsistence-related travel routes into and through the major coastal waterbodies, as identified by the North Slope Borough and the Native Village of Kaktovik, recognizing that marine and nearshore travel routes change over time, subject to shifting environmental conditions.
- c. Exploratory well drill pads, production well drill pads, or a central processing facility for oil or gas would not be within 2 miles of the coast inland or on coastal waters, lagoons or barrier islands within the boundaries of the Arctic Refuge Coastal Plain area. Other facilities necessary for oil and gas production that necessarily must be within this area (e.g., barge landing, seawater treatment plant, or spill response staging and storage areas) would not be precluded. Nor would this stipulation preclude infrastructure associated with offshore oil and gas exploration and production or construction and renovation.
- d. Infrastructure that may be necessary for authorized oil and gas activities within these critical and sensitive Coastal Area habitats (e.g., barge landing, docks, spill response staging and storage areas, or pipelines) may be approved by the authorized officer on a case-by-case basis in consultation with the U.S. Fish and Wildlife Service, or the National Oceanographic and Atmospheric Administration, or both as appropriate. All lessees/permittees involved in authorized activities in the Coastal Area must coordinate construction and use infrastructure with all other prospective Refuge users or user groups. Before conducting open water activities, the lessee shall consult with the Alaska Eskimo Whaling Commission, the North Slope Borough, and local whaling captains’ associations to minimize impacts to subsistence whaling, and other subsistence activities of the communities of the North Slope. In a case in which the BLM authorizes permanent oil and gas infrastructure within the Coastal Area, the lessee/permittee shall develop and implement an impact and conflict avoidance and monitoring plan to assess, minimize, and mitigate the effects of the infrastructure and its use on these Coastal Area habitats and their use by wildlife and people, including:
1. Design and construction of facilities shall minimize impacts to subsistence uses, travel corridors, seasonally concentrated fish and wildlife resources.
  2. Daily operational activities, including use of support vehicles, watercraft, and aircraft traffic, alone or in combination with other past, present, and reasonably foreseeable activities, shall be conducted to minimize impacts to subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources.
  3. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, bridges or causeways, shall be sited and constructed so as to not pose a hazard to navigation by the public using traditional high-use subsistence-related travel routes into and through the major coastal lagoons and bays as identified by the community of Kaktovik and the North Slope Borough.
  4. Demonstrated year-round oil spill response capability, including the capability of adequate response during periods of broken ice or open water, or the availability of alternative methods to prevent well blowouts during periods when adequate response capability cannot be demonstrated. Such alternative methods may include seasonal drilling restrictions, improvements in blowout prevention technology, equipment and/or changes in operational procedures, and “top-setting” of hydrocarbon-bearing zones.



e. Avoid or minimize impacts related to oil spill response activities, including vessel, aircraft, and pedestrian traffic that add to impacts or further compound “direct spill” related impacts on area resources and subsistence uses. f. Before conducting open water activities, the lessee shall consult with the community of Kaktovik, the Alaska Eskimo Whaling Commission and the North Slope Borough to minimize impacts to the fall and spring subsistence whaling activities of the communities of the North Slope.

f. Vessels used as part of a BLM-authorized activity shall be operated in a manner that minimizes disturbance to wildlife in the Coastal Area. Vessels shall maintain a 1-mile buffer from the shore when transiting past an aggregation of seals (primarily spotted seals) using a terrestrial haulout unless doing so would endanger human life or violate safe boating practices. Vessels shall maintain a 0.5 mile buffer from polar bears observed on land or ice, and shall avoid polar bears in the water by at least 100 yards unless doing so would endanger human life or violate safe boating practices. Vessels shall not conduct ballast transfers or discharge any matter into the marine environment within 3 miles of the coast except when necessary for the safe operation of the vessel.

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#### ***K-W Lease Stipulation – Wilderness Boundary***

Objective: Protect wilderness values within the Mollie Beattie Wilderness Area

Requirement/Standard:

- a. Surface occupancy, including exploratory and production well drill pads, structures and facilities, gravel and ice roads would not be allowed within 3 miles of the southern and eastern boundaries of the 1002 area where they are adjacent to designated Wilderness.
- b. To the extent practicable, aircraft operations will be planned to minimize flights below 2,000 feet above ground level when flying within 3 miles of the Wilderness boundary.

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#### ***K-S Lease Stipulation – Subsistence***

Objective: Ensure a continued opportunity for traditional subsistence access and use of critical habitats and resources along coastal marine areas and designated high use river corridors.

- a. Traditional access and use of the coastal marine waters and near inland areas are most significant during the open water periods from June through October for travel and harvest of marine mammals, migratory birds, fish, and caribou.
- b. Traditional access and use of the Hulahula and Okpilak drainages are most significant during the late fall October through May for access to the uplands of the coastal plain the Brooks Range for hunting caribou, sheep and furbearers, and to accessed fishery resources in the Hulahula River and the upper Sadlerochit River-Schrader-Peters Lake region.

Requirement/Standard: To ensure a continued opportunity for important high use subsistence areas along the 1002 coastal shoreline and the Hulahula and Okpilak river corridors:

- a. No surface occupancy of non-subsistence infrastructure will be allowed inland 4 miles from the coast and extend from the Canning River to the Aichilik River on Arctic National Wildlife Refuge Lands;

- b. No surface occupancy of non-subsistence infrastructure will be allowed 4 miles on either side of the Hulahula River and Okpilak Rivers.

## SUMMER VEHICLE TUNDRA ACCESS

### *L-1 Best Management Practice*

**Objective:** Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of, and adequate habitat for birds, fish, and caribou and other terrestrial mammals; and minimize impacts to subsistence activities.

**Requirement/Standard:** On a case-by-case basis, the authorized officer in consultation with US Fish and Wildlife Service ~~BLM~~ may permit low-ground-pressure vehicles to travel off of gravel pads and roads during times other than those identified in Best Management Practice C-2a.

Permission for such use would only be granted after an applicant has:

- a. Submitted studies satisfactory to the authorized officer and US Fish and Wildlife Service of the impacts on soils and vegetation of the specific low-ground-pressure vehicles to be used. These studies should reflect use of such vehicles under conditions similar to those of the route proposed for use and should demonstrate that the proposed use would have no more than minimal impacts to soils and vegetation.
- b. Submitted surveys satisfactory to the authorized officer and US Fish and Wildlife Service of subsistence uses of the area as well as of the soils, vegetation, hydrology, wildlife and fish (and their habitats), paleontological and archaeological resources, and other resources as required by the authorized officer.
- c. Designed and/or modified the use proposal to minimize impacts to the authorized officer's and US Fish and Wildlife Service's satisfaction. Design steps to achieve the objectives and based upon the studies and surveys may include, but not be limited to, timing restrictions (generally it is considered inadvisable to conduct tundra travel prior to August 1 to protect ground-nesting birds), shifting of work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring. At the discretion of the authorized officer and US Fish and Wildlife Service, the plan for summer tundra vehicle access may be included as part of the spill prevention and response contingency plan required by 40 CFR 112 (Oil Pollution Act) and Required Operating Procedure A-4.



d.. Designed and/or modified the use proposal to minimize impacts to the authorized officer's and US Fish and Wildlife Service's satisfaction. Design steps to achieve the objectives and based upon the studies and surveys may include, but not be limited to, timing restrictions (generally it is considered inadvisable to conduct tundra travel prior to August 1 to protect ground-nesting birds), shifting of work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring. At the discretion of the authorized officer, the plan for summer tundra vehicle access may be included as part of the spill prevention and response contingency plan required by 40 CFR 112 (Oil Pollution Act) and Required Operating Procedure A-4.

## GENERAL WILDLIFE AND HABITAT PROTECTION

### *M-A Best Management Practice*

Ensure that the Refuge meets the ANILCA mandate "to conserve fish and wildlife populations and habitats in their natural diversity"

Requirement/Standard: Activities associated with exploration, production, and transportation of oil and gas resources will be conducted in such a way as to not substantially alter the natural abundance and diversity of wildlife species. Development proponents will work with managing agencies to establish appropriate assessment and monitoring protocols to ensure that populations are maintained. Where data on species occurrence and abundance are lacking, appropriate surveys will be conducted prior to development to determine baseline population levels. Study designs will be approved by the authorized officer and US Fish and Wildlife Service after consultation with other federal, state, North Slope Borough agencies and the Native Village of Kaktovik and Venetie Tribal Council, as appropriate.

### *M-1 Best Management Practice*

Objective: Minimize disturbance and hindrance of wildlife, or alteration of wildlife movements through the coastal plain of the Arctic National Wildlife Refuge.

Requirement/Standard: Chasing wildlife with ground vehicles and aircraft is prohibited. Particular attention will be given to avoid disturbing caribou and polar bears.

***M-2 Best Management Practice***

Objective: Prevent the introduction, or spread, of non-native, invasive plant species in the coastal plain of the Arctic National Wildlife Refuge.

Requirement/Standard: Certify that all equipment and vehicles (intended for use either off or on roads) are weed-free prior to transporting them into the coastal plain of the Arctic National Wildlife Refuge.

- a. Prior to operations in the Coastal Plain, submit a plan for approval by the authorized officer and US Fish and Wildlife Service, detailing methods for staging, operating, and cleaning equipment and vehicles, including boats, that avoids and minimizes the introduction and spread of invasive species. The plan should address both aquatic and terrestrial plants and animals. The plan should also provide details related to the monitoring and controls of non-native species.
- b. Monitor annually along roads for non-native invasive species, and initiate effective weed control measures upon evidence of their introduction.

~~Certify that all equipment and vehicles (intended for use either off or on roads) are weed free prior to transporting them into the NPR A. Monitor annually along roads for non native invasive species, and initiate effective weed control measures upon evidence of their introduction. Prior to operations in the NPR A, submit a plan for the BLM's approval, detailing the methods for cleaning equipment and vehicles, monitoring for weeds and weed control.~~

***M-3 Best Management Practice***

Objective: Minimize loss of populations of, and habitat for, plant and animal species that are rare or endemic to the Arctic.

Requirement/Standard: If a development is proposed in an area that provides potential habitat for an identified rare or endemic plant or animal species in Alaska, the development proponent would conduct surveys at appropriate times of the summer season and in appropriate habitats for the Sensitive Plant Species that might occur there. The results of these surveys will be submitted to the BLM with the application for development.

***M-4 Best Management Practice***

Objective: ~~Minimize loss of individuals of, and habitat for, mammalian species designated as Sensitive by the BLM in Alaska.~~

Requirement/Standard: ~~If a development is proposed in an area that provides potential habitat for the Alaska tiny shrew, the development proponent would conduct surveys at appropriate times of the year and in appropriate habitats in an effort to detect the presence of the shrew. The results of these surveys will be submitted to BLM with the application for development.~~